NOLOGY DEPT.

TEXTILE WORLD

JANUARY • 1945

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DETROIT

SCOTTSVILLE PLANT Will Aid Increased Tire Program

PAGE 76

R V. 95 Jan.-June 1945

GOOD MANAGEMENT

... functions best when backed up by a strong cash position. It's true today. And it will be even more true in the post-war period.

You will be able to consider Tomorrow's problems with natural confidence, when you know your cash position is well entrenched ... The many successful firms whom we serve say that Commercial Factoring is the type of business financing that enables them to do this ... You, too, can reinforce your present strong position. Plan now to assure, in an economical manner, that what you may want to do tomorrow is encouraged by a properly *maintained* cash position ... It will be worth your while to talk with us about this.

COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc. Established 1828
Schefer, Schramm & Vogel Established 1838
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TWO PARK AVENUE, NEW YORK

EUGENE G. LYNCH, 80 FEDERAL STREET, BOSTON, MASS.
T. HOLT HAYWOOD, WINSTON-SALEM, NORTH CAROLINA

THE CFC PLAN IS NOT LIKE ANY OTHER FACTORING SERVICE ... THE DIFFERENCE IS IMPORTANT

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Looms in 1945

As it now appears, Draper Corporation will have completed in a month or so its quota of War Work other than the Building of Textile Machinery.

What, then, is the prospect of accepting loom orders to be filled in the near future?

With the big new building we erected here in Hopedale, primarily for war work, with the large wartime purchase of machine tools, shortly to be augmented by machines now on order, we have the equipment to enable us to set as our immediate aim, when conditions are right, an output of looms 50% more than in good pre-war years. Our plant capacity is far greater than this, and plans are actually "on the drawing board" for more than doubling our pre-war production rate.

But conditions are temporarily not right.

There are Rated Orders on our books that will keep us busy for several months.

We are suffering from man-power shortage. As we began to shift over from war work, foundrymen and erectors left us for the armed forces and industrial war work. Largely to get more man-power we purchased a few months ago a commercial foundry in a neighboring town. We are installing the latest system of automatic molding in our Hopedale foundry at a cost of over half a million dollars. We are moving in every direction to build up production.

Our Pledge

We propose to build production to the point where the needs of all our customers can be satisfied at the earliest possible moment. This is regardless of the fact that it may mean a temporary rate of output far above what we can look forward to over a period of years.

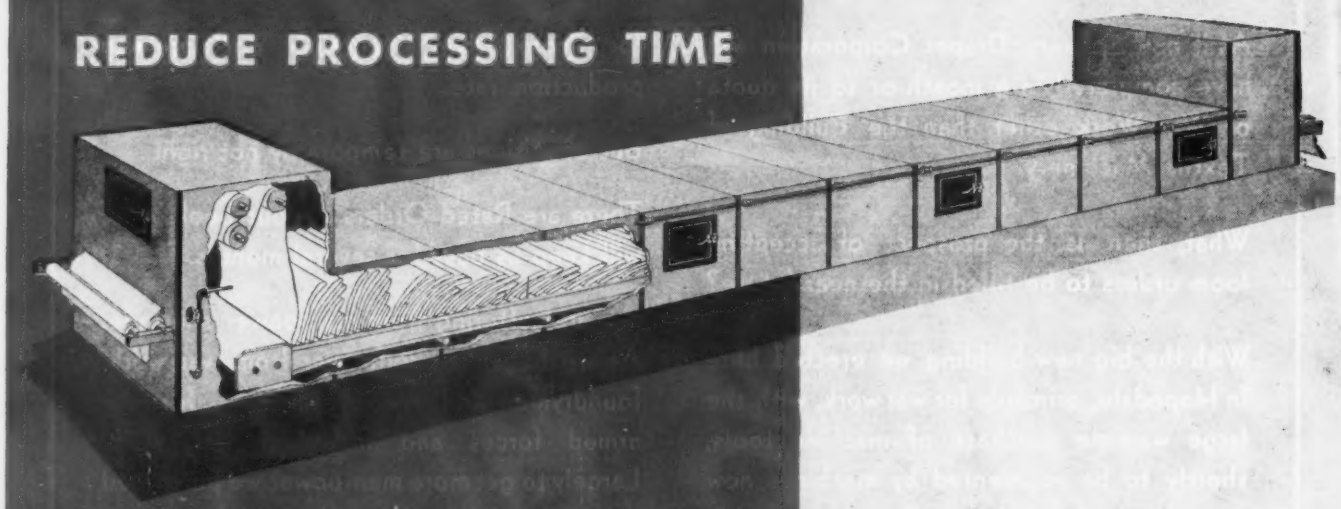
For the present we are not taking firm orders for new looms because of our inability to promise delivery and uncertainty as to prices.

Meanwhile, we *are* maintaining a list of wanted looms, reserving space in the order of the entry of the reservation. If you have definite loom requirements, you should be on this list.

DRAPER CORPORATION

ELIMINATE

KIER and JIG SCOURING...
REDUCE PROCESSING TIME



with the MATHIESON CONTINUOUS OPEN-WIDTH STEAMER

Perfection of the Mathieson-developed open-width steamer—after broad plant-scale experiments—brings many new advantages to textile processing operations.

CONTINUOUS TREATMENT IN THE MATHIESON STEAMER:

1. Replaces kier and jig scouring by a single continuous alkaline steaming.
2. Reduces scouring time from 4 to 12 hours to less than one hour.
3. Prepares cotton and rayon fabrics—**in one steaming**—for any subsequent treatment such as conventional bleaching or dyeing.
4. Handles fabrics of any width, any weight, any yardage.
5. Eliminates the danger of rope marks and distortions in the weave.
6. Gives greater flexibility and control in the scouring process—may also be used for any of the hot bleaching processes.

Let the Mathieson technical staff furnish more detailed information on this important development in textile processing

Mathieson
CHEMICALS

THE MATHIESON ALKALI WORKS (INC.) 60 EAST 42nd STREET, NEW YORK 17, N. Y.

CAUSTIC SODA . SODA ASH . BICARBONATE OF SODA . LIQUID CHLORINE . CHLORINE DIOXIDE . AMMONIA, ANHYDROUS & AQUA . HTH PRODUCTS . FUSED ALKALI PRODUCTS . SYNTHETIC SALT CAKE . DRY ICE . CARBONIC GAS . SODIUM CHLORITE PRODUCTS . SODIUM METHYLATE

TABLE OF CONTENTS

Classified According to Reader Interest

← MILL DEPARTMENTS — FIBER DIVISIONS →

YARN PRODUCTION	WEAVING	KNITTING	FINISHING	ENGINEERING	MISCELLANEOUS	FEATURE ARTICLES	PAGE	COTTON	SYNTHETICS	WOOL	MISCELLANEOUS
Y	W	K	F	E	M	1945 Is a WAR YEAR (Editorial)	4	C	S	W	M
Y	W	K	F	E	M	ARGENTINA Has Active Textile Industry	69	C	S	W	M
Y	W					Mill Gets More DUCK PRODUCTION	72	C	S	W	M
	W					Loomfixer's TOOLS—Weapons of Production	74	C	S	W	M
Y	W			E		Scottsville Features Materials HANDLING	76	C	S		
Y						SINGLE TWIST—Facts and Fallacies	79	C			
Y	W			E		Our Cotton Mills Look Good to ENGLAND	82	C			
			F			Pad-Steam DYEING in Volume Production	84	C			
	W					Improper Tension, Defective SELVAGE	86	C	S		M
Y		K				Throwing Defects Show Up in HOSIERY	88		S		
			F			Technics Developed for DYEING Synthetics	91		S		
	W		F		M	Elements Affecting FABRIC WARMTH	97		S	W	
	W					SIZING Spun Rayon Governed By Fibers	99		S		
Y	W	K	F	E	M	Pepperell Greets the Returning VETERAN	103	C	S	W	M
Y				E		Inter-Relation of Spinning SPEEDS	107	C			
Y	W	K	F	E	M	COTTON Problem Thrashed Out	111	C			
	W		F			Defects in WOOLEN FABRICS	115			W	
Y						Good Throwing Needs Accurate TWISTING	117		S		
		K				Good Years Foreseen by HOSIERY Men	119	C	S	W	
Y	W	K	F	E	M	Pointers on Good EMPLOYEE Relations	121	C	S	W	M
	W					LOOMFIXERS' Manual—Cotton	190	C			
		K				Fixing HOSIERY Machines—Full-Fashioned	193		S		
						KINKS AND SHORT CUTS					
	W					Brass Fork Does Double Duty on SLASHER	130	C	S		
	W					SHUTTLE-STOP Pin Checks Banging Off	130	C	S	W	M
	W					Dropped-Harness DEFECTS Prevented	132	C	S	W	M
Y				E	M	RACK Helps in Getting Needed Bale	132	C		W	M
Y						BELT WIPER for Card From Tire Thread	132	C		W	
	W					Roller Selvage Beams for Uniform TENSION	134	C	S	W	M
	W					Old BOBBINS Converted for New Work	134	C	S	W	M
Y	W	K	F		M	CRAYON Container Keeps Pockets Clean	134	C	S	W	M
	W					Grind SPINDLE Base if Screw Too Short	136	C	S	W	M
	W					CORD Replaces Stick and Cannot Be Lost	136	C	S	W	M
Y						WARPER-CREEL Repair	136			W	
						OTHER DEPARTMENTS					
					M	YARN-SLIPPAGE Resistance Measured	123	C	S	W	M
			F		M	ELECTRONIC Drying of Textiles	123	C	S	W	M
				E		Small-Diameter Fluorescent LAMPS	123	C	S	W	M
					M	Semi-Automatic MOISTURE-TESTER	124	C	S	W	M
				E		Avoiding Cracks When METALLIZING	126	C	S	W	M
			F	E		Protect Your VALVES	126	C	S	W	M
				E	M	Hints on MATERIALS-HANDLING	128	C	S	W	M
Y						How About a Revolving SPINNING RING?	142	C	S	W	M
				E		Small Mill and Specialized MAINTENANCE	144	C	S	W	M
Y	W	K	F		M	RAYON Terminology Called Confusing	146		S		
			F			Wants to Develop SCREEN-PRINT Patent	146	C	S		
			F			Data Asked on SALTS Used Before 1930	148	C	S	W	M
			F			Effect of PLASTICS on Rubber Questioned	148	C	S		M
				E		How Should CLEANING Be Handled?	150	C	S	W	M
Y	W	K	F	E	M	Suggests System for Better Use of IDEAS	150	C	S	W	M
	W					Doubles Life of Wool SLASHER Blankets	152	C	S		
Y	W		F			OVERCOATING Inadequately Scoured	154			W	
			F			Grinding NAPPERS	157	C		W	
Y	W	K	F	E	M	Accident-Prone EMPLOYEE	157	C	S	W	M
			F			Finishing VELVETEEN	158	C			
Y	W					WARP STREAKS in Rayon Satin	160		S		

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DEPARTMENTS

Book Reviews 140
Boosting Employees' Morale...164
Editorial 4
Fixing Hosiery Machines.....193
Free For the Asking.....196
Kinks & Short-Cuts.....130
Loomfixers' Manual 190
Mill Maintenance 126
New Dyes and Chemicals.....128
News About Men.....208
News About Mills.....222
News About Suppliers.....200
News of the Month.....170
Old Man Carelessness.....140
Pete and Bill.....139
Questions and Answers.....154
Round Table 142
Textile Calendar 176
Textile Equipment News.....133

THE Long-Range View

1945 Is A WAR YEAR

Von Rundstedt's unexpected break-through on the Western Front, even though now meeting with reverses, has provided ample evidence that 1945 is going to be a war year. It is clear at least that the Germans, in their wool-and-rayon-blend winter uniforms, hope to do better than stand firm in the snows of the Belgian frontier.

Gone, therefore, is the dream of an early V-E Day, when the textile industry could make a start on its reconversion job—a job which, although by no means complicated and difficult, is to be prolonged more than are similar jobs in many other industries, thanks to the staggering foreign-relief textile program. However, every day that reconversion is postponed increases the backlog of civilian need and demand for the products of this unexpanded industry; and the encouraging picture of postwar business which results should help us to pitch into the reviving war job with wholehearted vigor and resolve, free from those postwar worries which confront the inflated munitions industries.

BEFORE THE TEXTILE INDUSTRY in this bristling twilight of the European conflict lies a man-sized war-production job which, surprisingly enough, is increasing. Almost on the very day we are told that duck production is finally close to "schedule" (although by no means up to military needs), we receive word that cord production must be stepped up to meet an increased need for tires. Simultaneously comes the announcement that all worsted production is to be frozen for the first five months of 1945, with the output reserved for rated orders. The Office of Civilian Requirements wants 25,000,000 yd. of woolens and worsteds during the first quarter, on top of the yardage it will get from the worsted-freeze order. The Army, furthermore, expects to step up its requirements for melton overcoating. Hosiery machines are being held to the production of military socks. Coarse cotton yarns are frozen until March 31.

Experience on the Western Front is developing some unexpected needs. Jackets are lasting only ten weeks, instead of the expected five months. Underwear, intended to hold out six months, is deteriorating in two; and this fact is partly responsible for the belief that almost every knitting machine in the industry will be required to meet a military-underwear demand during the next six months exceeding the total civilian and military production for the same period last year. Blankets are disappearing on the Western Front: and it should make no difference to the textile industry whether or not this fact is due to pilfering, illegal sale, or unnecessary discarding, as we can be sure that all reasonable steps will be taken to avoid such losses. Our job is to see to it that when General Eisenhower calls for millions of additional blankets, as he did late in December, they are ready for him.

UNDOUBTEDLY the feeling that the war is nearly over has been responsible for the inability of much of American industry to meet production. The von Rundstedt surprise, therefore, may prove to be just the tonic we need. Even though the result may be the piling up of excessive surplus property which must be disposed of in peacetime, we can do no less for the present than assume that the war is to be of indefinite duration.

We must increase our efforts to find textile workers and take steps to keep them working—by providing them with transportation or lodging, setting up restaurants in the plant, safeguarding employees' health, establishing nurseries for the children of working mothers, inaugurating training courses, and—above all—instilling in the minds of the workers (and in the minds of all others in the mill communities also) the fact that textile manufacture is essential to the war effort. "Workin' in the mill" must be portrayed convincingly and clearly in its true light as a patriotic duty. Absenteeism and quitting must be discouraged.

And our job does not end with the securing and holding of workers. Those who labor must do so more efficiently; and we must help them with more supervisory attention (on the third shift particularly), aptitude tests, more careful instruction, short cuts, and study and simplification of their jobs.

Von Rundstedt has clearly shown us that it is time to shift much of the emphasis we have lately been placing on postwar planning back to war-production planning. This is certainly what our boys facing the death-belching German panzers expect of us, as do those other heroes of America's armed forces who are grappling with the fanatical Japanese in the Pacific.

Edwin S. Fowle

BECAUSE commanders need battle information in a hurry, reconnaissance planes often carry complete photographic laboratories. Within minutes after landing, equipment can be unpacked and set up for quick, in-the-field development.

Black cloth for flying darkrooms is only one of the vast variety of textile products vitally needed for war and peace. And textile machinery, producing them on round-the-clock schedules, runs more smoothly, with fewer service troubles, when lubricated with Texaco.

Texaco Stazon, for example, assures efficient lubrication with minimum spoilage of yarn or fabric due to oil stain. It stays on fast-moving cranks, etc., withstanding load shocks without splattering, creeping, dripping. Its high stability prevents excessive formation of non-lubricating deposits in bearings or enclosed housings.

For loom cams, use *Texaco 919 Lubricant-S.*

Texaco lubricants have proved so effective in service they are definitely preferred in many fields, a few of which are listed at the right.

Texaco Lubrication Engineering Service is available to you through more than 2300 Texaco distributing points in the 48 States. The Texas Company, 135 E. 42nd St., New York 17, N. Y.

THEY PREFER TEXACO

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

★ More locomotives and railroad cars in the U. S. are lubricated with Texaco than with any other brand.

★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN THE TEXACO STAR THEATRE WITH JAMES MELTON SUNDAY NIGHTS ★ METROPOLITAN OPERA BROADCASTS SATURDAY AFTERNOONS

SLIP-PROOFING with new, inorganic resins

BORN these swatches of a lightweight rayon came from the same bolt . . . yet simply rubbing them between your fingers would reveal a startling difference in slippage.

As in the photograph (1) above, the threads of one would separate easily . . . The second would be unaffected.

Put them both through the much more exact A.S.T.M. test for seam slippage . . . and the second swatch would rate at least 50% better than the first.

The second swatch has been slip-proofed with Syton W-20, one of a group of new finishing agents with fascinating possibilities developed by Monsanto textile laboratories.

Specifically, the Sytons are colloidal solutions of polymerized silica, or, in simpler terms, colloidal quartz. When as little as 1% of these amazing inorganic resins is deposited on the individual fibres of silks, nylons, rayons or cottons, slippage is reduced by 50% and more.

The Sytons are effective on a wide range of fabrics, from dress fabrics to sheer hosiery. They can be applied to fabrics in existing mill equipment and are well adapted to present mill practices.

In short, the Sytons are another practical step forward toward *better* fabrics . . . at *lower* production costs . . . through the closer partnership between chemicals and textiles.

As with other, equally promising new Monsanto products for tomorrow's textiles, the Sytons will not be offered for general commercial use until they have been thoroughly proved in mill trials . . . If you are particularly interested in slip-proofing, however, we will be glad to discuss the possibility of arranging trials in your mill on your particular fabrics . . . Simply write or wire: MONSANTO CHEMICAL COMPANY, Merrimac Division, Everett Station, Boston 49, Massachusetts.

Divisions cooperating in Monsanto textile research in addition to Merrimac Division include: Central Research Laboratories at Dayton, Ohio: Organic Chemicals Division and Phosphate Division at St. Louis, Missouri; Plastics Division at Springfield, Massachusetts.

MONSANTO
CHEMICALS AND PLASTICS

The Textile
SERVING INDUSTRY . . . WHICH SERVES MANKIND

Yes, Men Make Motors!

NO MACHINE KNOWN can duplicate the skill of Sam Meister, left, of Allis-Chalmers Norwood Works.

Holding an acetylene torch in his right hand, a silver alloy rod in his left, Sam silver-brazes end connections of Allis-Chalmers' "Indestructible Rotor."

Round and round the connections he works — expertly flowing in molten alloy to form a joined structure that can withstand as much heat as though it were a single die-casting.

No machine can do that job — and no machine can fully test how well it is done.

There's only one test . . . wait 5, 10, 15 years and *see.*

And that's the test in which Allis-Chalmers motors have proved over the years that they're *great* motors. That's why you hear it said so often: *"You can depend on Allis-Chalmers Motors!"*

• • •

YES, HUNDREDS of Allis-Chalmers men—craftsmen like Sam Meister — know they have a big personal stake in every Allis-Chalmers motor. When they build a great motor for you, they're making a *friend* . . . and they know that's something no company and its workers can have too many of.

Next time *you* need great motors contact our district office. Or write direct to ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.

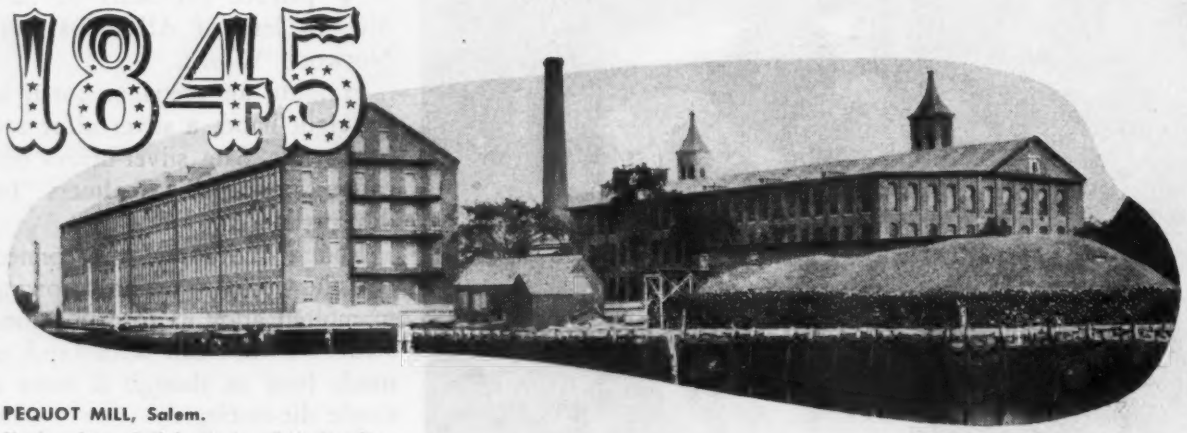
A 1730

A-C WE WORK FOR VICTORY WE PLAN FOR PEACE

♪ *Tune in the Boston Symphony, Blue Network, Saturday at 8:30 pm, EWT.*

YOU CAN DEPEND ON ALLIS-CHALMERS MOTORS

A Century OF SERVICE



PEQUOT MILL, Salem.
Used machinery built by the Lowell Machine Shop.

IMPORTANT DEVELOPMENTS PIONEERED BY SACO-LOWELL

Combined Blending and Cleaning Feeders with Electric Control

Synchronized Automatic Electric Control for Opener Rooms

Openers with Beaters Vertically Fed and Grid Enclosed

Increased use of Air for Cleaning as well as Transport

Air Recirculating System for Opener Rooms and Picker Rooms

Distributor Overflow System with Reserve Box

One Process Pickers with Blending Reserve and 2-Speed Drives

Automatic Control Feed Systems to Automatic Feeders or direct to Picker Beaters

Automatic Reversing Aprons

Positive Control Units with Solenoid Trip Motions

High Speed Dust and Waste Extractor

Lap Meters for testing Picker Laps

Color Blending Units applied to Pickers

Continuous Card Strippers

Roller Top Cards for Rayon

Improved Perforated Metal Screens

Improved Vacuum Stripper Units

Controlled Draft Drawing Process

Special 4-Roll Frames for Long Staple Rayon and Blends

Sliver Tester

High-Duty Double Side Comber

Improved 4-Roll Universal Draw Box for Combers

New Design Drive for Draw Box for Combers

Improved Roller Motion for Combers

Controlled Draft Roving for Cotton and other Fibers, Long and Short Staple

G-38 Cone for Accurate Tension Control on Roving Frames

Spring Pressure for Rolls on Roving Frames

Saco-Lowell Long Draft for Spinning Cotton and other Fibers, Long and Short Staple

Steel Ring Rails and Spindle Rails

Spring Tempered Heat Treated Spindle Blades

Large Capacity Oil Bases

Wood Top Spindles for Paper Tubes

Hardened Steel Cams

Constant Tape Tensions with Anti-Friction Pulley Bearings

Nitritex Finish for Rolls and other units

High Speed Spinning and Twister Spindles

High Speed Lubricated Twister Rings

High Speed Warpers

High Speed Slashers with Electric Controls

TO THE TEXTILE INDUSTRY

Saco-Lowell

Saco-Lowell looks forward to another 100 years of service . . . building and designing the machinery that has made American textile mills the world's most efficient and progressive.

1945

DEERING, MILLIKEN & COMPANY, Excelsior Mill, Clemson Plant.
As modern and efficient inside as its exterior is impressive and beautiful.

The history of the textile industry, its progress and development parallel the very growth and expansion of America itself. It is one of the earliest industries founded in America . . . and is today one of its largest and most important.

This year 1945 marks the centenary of the incorporation by special act of the General Court of Massachusetts, of the Lowell Machine Shop, one of the early units of Saco-Lowell Shops. During this century, scores of far reaching technological advancements have been developed and put to practical use. The engineering staff of Saco-Lowell have introduced many of the improvements in machinery, methods and practices which have made the products of American textile mills outstanding for quality, durability and value.

The same practical research and experience which has aided in the development of the textile industry in the past will be diligently continued in the years ahead. This is our pledge to an industry we are proud to serve.

Saco-Lowell Shops

60 BATTERYMARCH ST., BOSTON, MASS., *Charlotte, Greenville, Atlanta*

Mills are asking:

"WHAT CAN WE EXPECT FROM WHITIN IN 1945?"

This is a fair question and we'll try to answer it frankly

★

First of all we are pledged to be of the greatest possible assistance to the nation's war effort. This is our number one objective. Everyone is aware of the tremendous and growing importance of textile products to our armed forces. As their needs change and develop, we must stand ready to help the textile industry meet them. To this end it seems entirely logical that we will be called upon to supply greater quantities of present models of equipment to the industry than has been possible since Pearl Harbor. The types of equipment so built will be governed largely by the changing fortunes of war.

Repairs and replacement. Your present equipment has just borne the strain of another war year, and what a terrific load it has been called upon to carry! Almost continuous operation and undermanned maintenance crews have resulted in punishment which is reflected in the greatly increased demand for all sorts of repair and replacement parts – many of them for machines of ancient vintage that have been pressed into service. The need for keeping machinery now in place in good operating condition is widely recognized, and to this end we are planning to devote a substantial percentage of our output in the coming year to the production of such parts for hard-pressed machines in all branches of the industry.

Of one thing you may be sure. The entire Whitin organization will bend its every effort to serve the great textile industry in this critical hour when textile manufacturers are making such an important contribution to Victory.

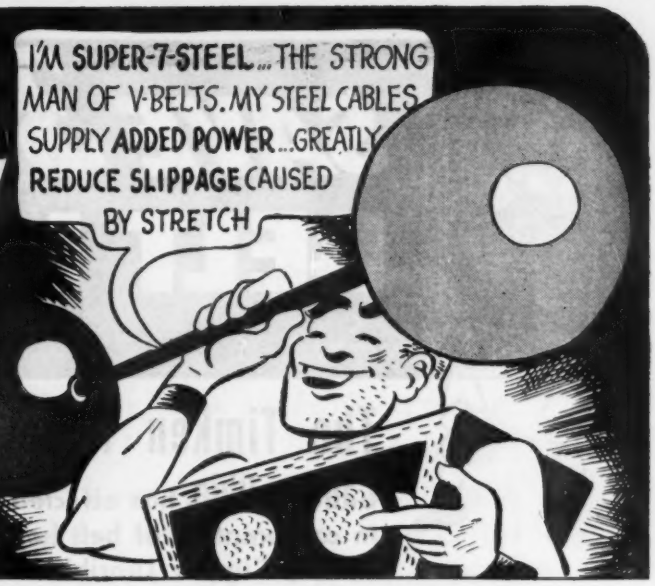
★

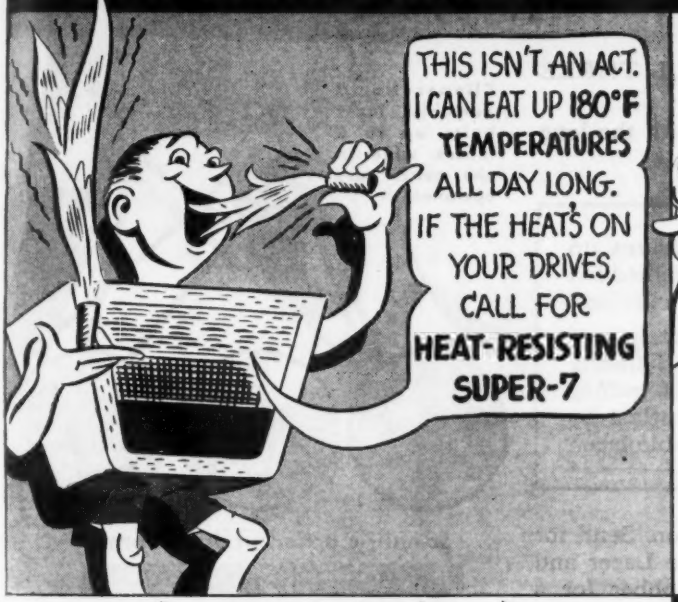
WHITIN MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

Greatest V-Belt Show ON EARTH!

EVERY MEMBER OF ALLIS-CHALMERS GREAT NEW V-BELT TEAM IS SPECIALLY DESIGNED, TESTED AND BUILT TO LICK A SPECIFIC DRIVE PROBLEM, SAVE YOU MONEY AND TROUBLE





DON'T WORRY IF YOUR BELTS MUST PRACTICALLY BATHE IN OIL OR GREASE. JUST ASK FOR SUPER-7 OIL-PROOF. I'M MADE OF IMPERVIOUS NEOPRENE.
OIL

IT PAYS TO MAKE **ALLIS-CHALMERS** YOUR

V-BELT DRIVE HEADQUARTERS

Texrope Super-7 V-Belts result from the cooperative research of two great companies—Allis-Chalmers and B. F. Goodrich—and are sold exclusively by A-C.

SAVE 30% ON YOUR BELT LACING COSTS

The Timken Roller Bearing Co. of Canton, Ohio, has effected a saving of about 30% in consumption of belt hooks by using Clipper Belt Hooks, Clipper Lubrihide Pins and Clipper Speed Lacers.

You, too, can make worth-while savings by using ALL THREE Clipper products.

Remember, only Clipper Belt Hooks are packed with the long wearing **Lubrihide Pins.**

The **Clipper No. 9 Portable Lacer** develops pressures up to 16 tons. With such pressure, hook legs can be embedded flush with the surface of any kind of belt and points clinched.

The scientific action of the jaws forms a perfect line of well rounded loops permitting the use of maximum diameter **Lubrihide Pin,** also providing equal distribution of pulling strain on every hook. A belt joint so made will outlast by two to three times one made with an old-style portable lacer.

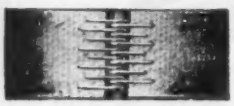
Clipper No. 9 Portable laces belts up to 6 inches wide in one quick, easy operation.

Scientific action of Jaws forms

a perfect loop for connecting pins.

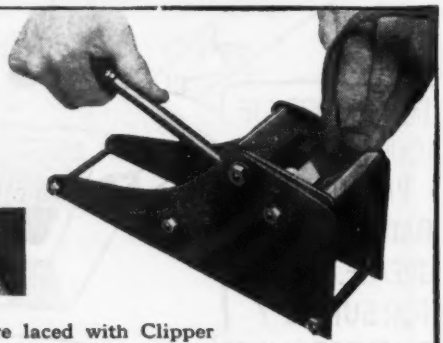
We suggest that you check YOUR belt lacing situation. Send for folder describing the powerful Clipper No. 9 Portable Lacer and other Clipper products. Phone your Mill Supply Jobber for a demonstration!

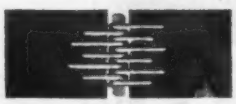
CLIPPER SPINDLE TAPE LACING EQUIPMENT



You can lace spindle tapes—10 times faster than stitching — with Clipper No. 25 Spindle Tape Hooks. The spinning frame is shut down only long enough to place the new tape on the pulleys and join the ends with the connecting pin — a short, easy operation. Tapes run true—last longer—run smoother—require less tension. VIBRATION is ELIMINATED.

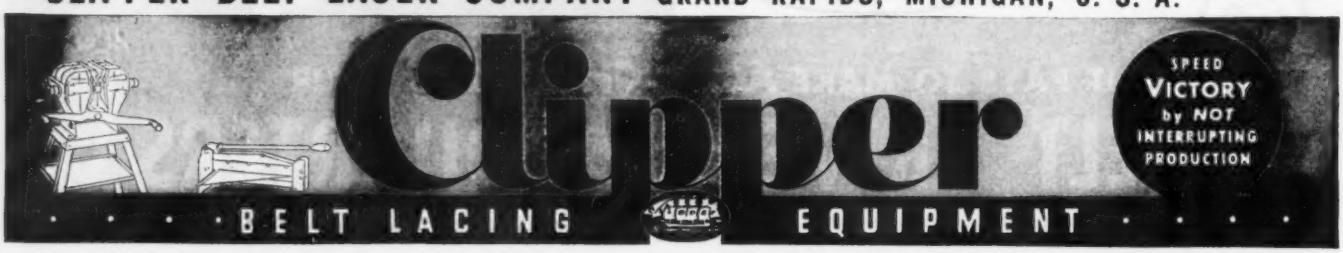
CLIPPER CONDENSER TAPE LACING EQUIPMENT





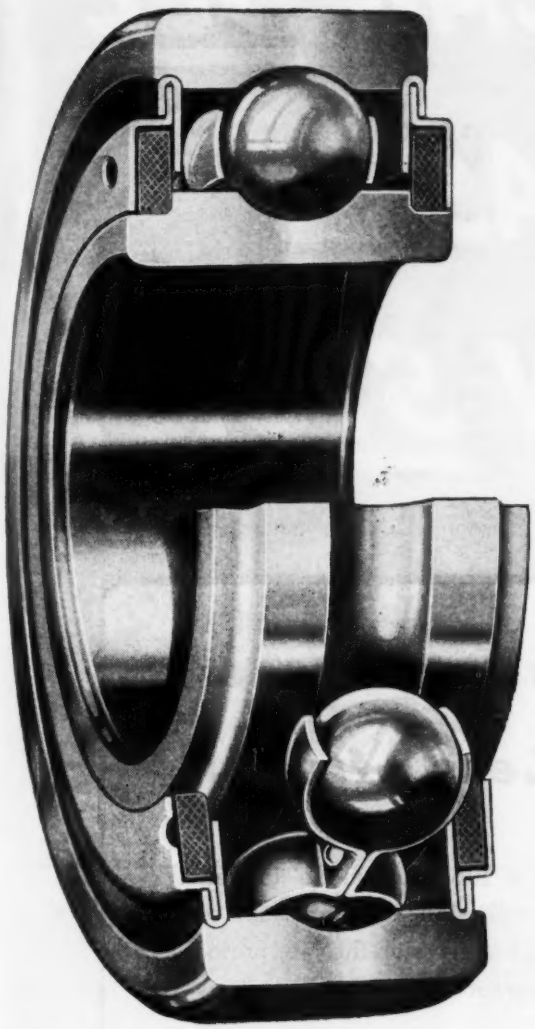
Condenser tapes are laced with Clipper No. 25 Condenser Tape Hooks. The joint is as flexible as the tape itself. Clipper Laced Condenser Tapes can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving, and cut to length. WRITE FOR INFORMATION.

CLIPPER BELT LACER COMPANY GRAND RAPIDS, MICHIGAN, U. S. A.



Announcing a SELF-SEALED BEARING

for wider application . . .



The originator and largest maker of self-sealed ball bearings offers further improvements, advanced design, for an even greater range of operating conditions.

Since New Departure introduced the first self-sealed ball bearings less than two decades ago, pyramiding demands have required the production by this company of more than 75 millions of these bearings. Better than words, such figures tell the story of the excellent service ND-seal bearings have delivered in virtually every kind of industry.

But, New Departure has never been content to let "good enough" be the final word. Now, with basic principles retained, an improved bearing is offered, having a new, even more efficient design of seal. This new seal not only prevents entrance of dirt or leakage of lubricant at low speeds or any mounting position — but, it is relatively frictionless and extremely efficient at very high speeds.

. . . AND in addition

a method is provided in these bearings whereby fresh lubricant can quickly revitalize the old, thus vastly extending their utility, and particularly where operating conditions are unusually severe.

This method of refreshing the lubricant does not require removal of the bearing from the housing. Neither does it involve the use of nipples, grease passages, plugs or removable seals. Further details will gladly be sent upon request. Ask for pamphlet IB.

nothing rolls like a ball

NEW DEPARTURE

BALL BEARINGS

3337

NEW DEPARTURE • DIVISION OF GENERAL MOTORS CORPORATION • BRISTOL, CONNECTICUT

Sales Branches: DETROIT, G. M. Bldg., *Trinity 2-4700* • CHICAGO, 230 N. Michigan Ave., *State 5454* • LOS ANGELES, 5035 Gifford Ave., *Kimball 7161*

OIL YOU CAN SEE IS WASTE YOU CAN STOP!

Leak-resistant lubes mean

Less oil—Less often

For textile machines, choose a lubricant made to resist leakage—one which has both adhesion and cohesion, one which will not drip and splatter, but stays on the job, protecting metal surfaces with a film of great strength.

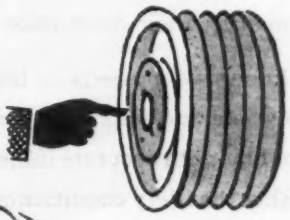
Choose STA-PUT Lubricants . . . for looms, comb boxes, shafting, motors, and many other places throughout the mill. Then the waste of oil stains on yarn or fabrics—a costly annoyance—will be minimized. Floors will no longer be a slippery menace around the machines. And the equipment will run smoothly, requiring less oiling labor because Sta-Put means "less oil, less often."

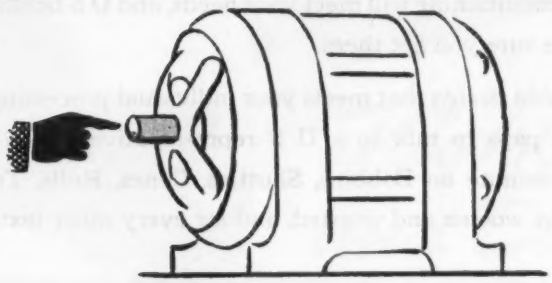
Textile greases, too, are a specialty with Houghton, which has been making quality lubricants for nearly three-quarters of a century. Write for the Sta-Put and new Grease booklets.

E. F. HOUGHTON & CO.

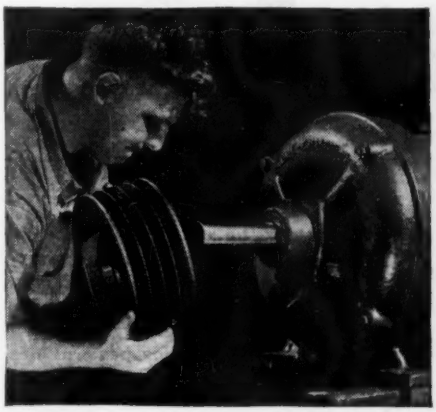
303 W. Lehigh Ave., Philadelphia 33, Pa.
1301-05 W. Morehead St., Charlotte 1, N. C.

See how Easy it is to put this on this

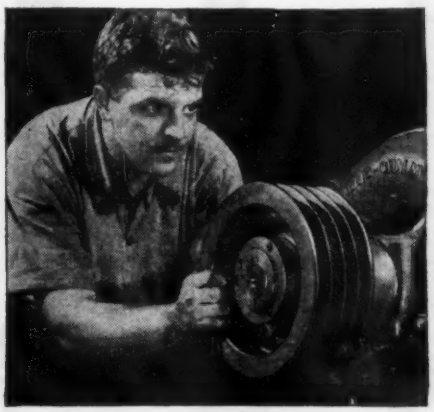




One quick operation and Allis-Chalmers' new "Magic-Grip" — *fastest mounting sheave on the market* — is locked securely to shaft... saving you time, money, trouble!



1 Place sheave on shaft. Slides on smoothly because clearance is provided by expanded bushing. There's *no* hammering — *no* forcing! Complete sheave and bushing unit comes intact—ready for quick, easy mounting.

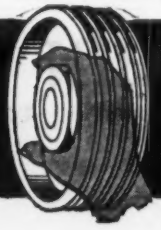


2 Slide to desired position. Sliding easily, sheave can be placed *exactly* according to straight-edge ...giving you true alignment with resulting smooth performance. A minimum of time is required.

3 Tighten three capscrews — and it's ready to go! Entire sheave is locked securely to shaft and *grips like magic!* No set screws to damage shaft. Send for Bulletin B6310. Allis-Chalmers, Milwaukee 1, Wis.

A 1750

Allis-Chalmers Texrope



"MAGIC-GRIP" SHEAVES

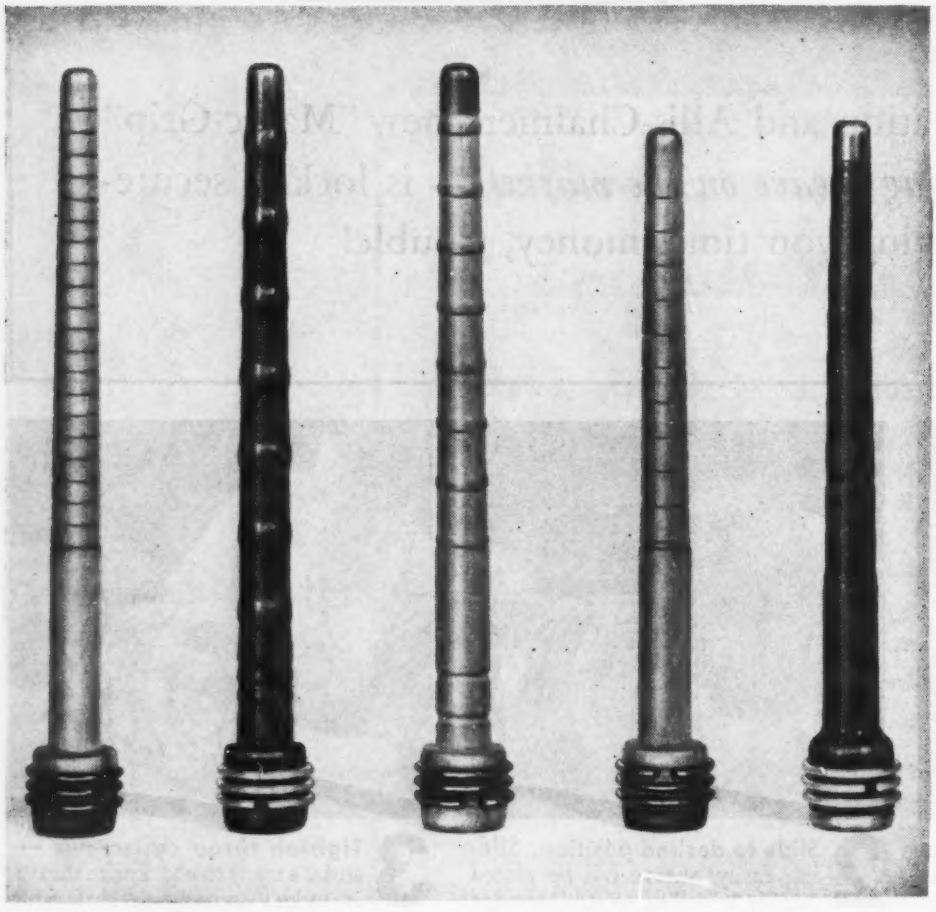
When you are ready to re-equip with

WOOLEN and WORSTED BOBBINS

– remember that U S has worked closely with loom builders for the past 87 years, meeting their most exacting standards.

U S knows your needs in bobbins . . . smooth-operating performance that reduces waste and improves your product – long service life that lowers costs. Only bobbins with accurate dimensions, uniform contours, extra wear resistance, and finishes that defy conditioning will meet your needs, and U S bobbin specialists know how to make sure you get them.

You also need a bobbin *design* that meets your individual processing requirements. That's why it pays to talk to a U S representative. You'll find his information up-to-the-minute on Bobbins, Shuttles, Cones, Rolls, Tubes, and other U S products – for woolen and worsted, and for every other textile.



SOME OF THE MANY BOBBIN STYLES made by U S for woolens and worsted. Left, 8¾" wool bobbins in oil and enamel finishes. Center, 8¾" bobbin with the feeler step cut for C&K feeler. Right, 8" worsted bobbins in oil and enamel finish.

Four Reasons Why It Pays To Consult U S

Mill-Wise Representatives
U S representatives cover every field of textile production, and can offer thoroughly experienced advice on the use of U S products in any process.

Controlled Raw Materials
Extensive U S owned timber properties allow close control of raw material selection and processing from the source.

Ample Plant Capacity
Five manufacturing plants, in North and South locations closely keyed to textile production areas, are fully equipped to handle any size orders.

Precision Standards
U S has co-operated with textile machinery manufacturers for 86 years – can meet the closest possible limits of tolerance in all tests for dimensions, weight, and balance.

The "Split Stock" process makes U S Bobbins Smoother — Stronger — Better Balanced

Splitting the stock makes sure the bobbin is "centered on the grain" for turning. With sawed stock, cross grain often causes weakness, splintering, unbalance. Specify U S Bobbins for superior performance, longer service life.

U S BOBBIN & SHUTTLE CO.

PROVIDENCE, R. I.
GREENVILLE, S. C.
CHICAGO AGENT:
Albert R. Breen,
20 E. Jackson Blvd.

LAWRENCE, MASS.
CANADIAN AGENT:
W. J. Westaway
Montreal, Que. — Hamilton, Ont.

JOHNSON CITY, TENN.
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ALABAMA AGENT:
Young & Vann Supply Co.
Birmingham

SANDOZ PRESENTS

the color achievement of the month

Night and Day

BY E. F. TIMME & SON

Always correct, come midnight or morning, is this queenly black Alaskan Kurl created by E. F. Timme & Son. Beauty, style, lustre for life... have been added to many a wardrobe with the help of colors by Sandoz. Often, Sandoz technicians have solved especially difficult color problems... by improving on existing formulae... or by recommending new ways to lower costs and improve quality.

Sandoz technicians can best help bring *your* next color achievement into being... because Sandoz has long been "thinking ahead with textiles." Sandoz, for instance, was first to develop a *complete range* of *Metomega Chrome colors* which have reduced boiling time as much as 50% and speeded up the development of correct shading.

Also, out of Sandoz laboratories, have come such chemical auxiliaries as *Levana*, unusually effective in preserving tensile strength and appearance in stripping and redyeing operations on woolen fabrics.

Ask Sandoz to help fill your current needs for dyes... acid, chrome and direct... or auxiliary chemicals for all natural and synthetic fibres. Sandoz application laboratories are maintained in New York, Boston, Philadelphia, Charlotte, Los Angeles, and Toronto. There are stocks in those cities. Other branches: Chicago, Paterson and Providence.

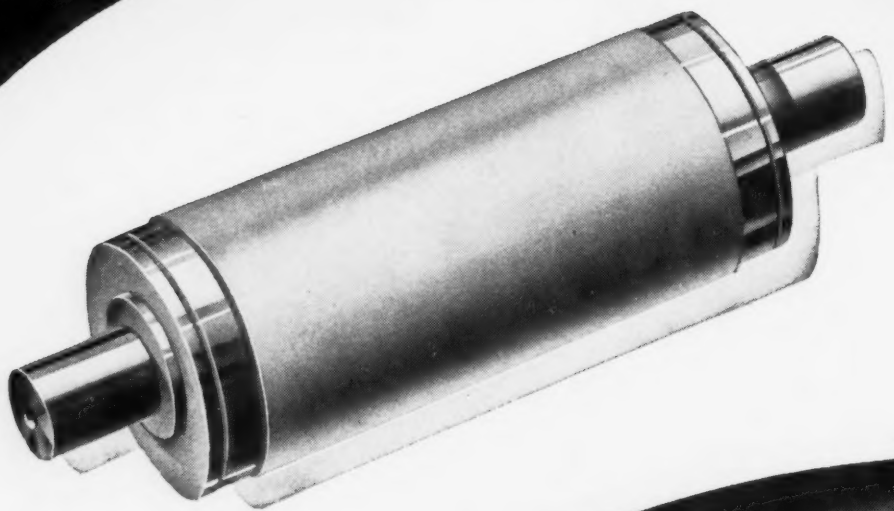
Meantime, watch for next month's "Color Achievement" featuring the work of another Sandoz customer among today's Textile Leaders.

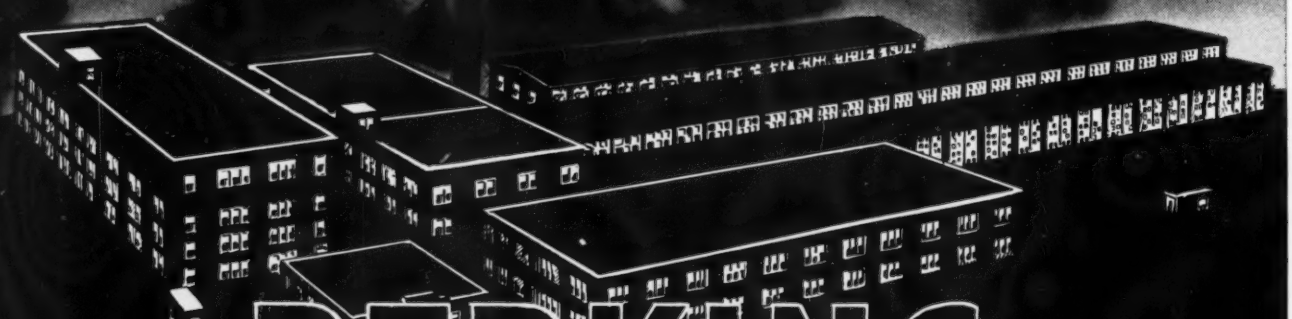
SANDOZ CHEMICAL WORKS, INC.
61 Van Dam Street, New York 13, N. Y.

DETROIT PUBLIC LIBRARY

SAND *thinks ahead with textiles* S SANDOZ

PERKINS RESEARCH
keeps pace with INDUSTRIAL PROGRESS





PERKINS
CALENDER ROLLS

B. F. PERKINS & SONS, INC.
HOLYOKE · MASSACHUSETTS

OWI Photo by Palmer in an Allegheny Ludlum plant

To this Flywheel, Many a Bomber

OWES ITS OWN ABILITY TO FLY

HAND BOOK OF SPECIAL STEELS

Newly revised and reprinted—a comprehensive book on the properties, uses, and best methods of handling, treatment, etc. of tool, stainless and other alloy steels. Plenty of tables to facilitate quick reference and selection. 136 pages, pocket-sized, latest data.

SEND FOR YOUR COPY

Address Dept. TW-31

WITHOUT special alloy steels, no modern bomber would fly . . . in fact, there are more of these materials in the big planes than any other single ingredient, a fact not so commonly understood.

Many of these special steels—electrical, corrosion and heat-resisting, valve and nitriding—first passed over the big breakdown mills in Allegheny Ludlum plants. Even more particularly, many of them were developments of our own research, and all of them are raw materials of the greatest portent for the future.

Special steels have eloquently demonstrated their ability to do for a product—perhaps *your* product—what ordinary materials cannot do. Let our Technical Staff help you to fit these tailor-made steels to your needs.

AL

STEEL FOR THE NATION'S WELFARE

Allegheny Ludlum

STEEL CORPORATION

BRACKENRIDGE, PENNSYLVANIA

Allegheny Stainless also handled by all Joseph T. Ryerson & Son, Inc. warehouses

W&D—A-9334

A Recent Installation of Four SARGENT STOCK DRYERS
in a Progressive New England Worsted Mill

A Production Problem Solved -

• • • THIS IS THE IMPORTANT FACT!

Advantages of this modern installation

— Stock dried at lower temperatures — The use of low pressure steam
— Lower power consumption — Less floor space required
— Costly repairs and breakdowns eliminated — A better product

Why not let SARGENT solve your Drying troubles ?

Important Defense Items by SARGENT	Machines for Smokeless Powder Plants • Machines for Synthetic Rubber Plants • Textile Machinery for the manufacture of uniforms • Machined parts for large caliber guns

C. G. SARGENT'S SONS CORPORATION

Graniteville, Massachusetts, U.S.A.

With Geon it's the *combination* of properties that counts

THAT flexible plastic film in the picture is 4/1000 of an inch thick. Yet it remains unaffected even by nitric acid. That's because it's made from one of the GEONS, a new group of polyvinyl materials whose long list of unusual properties includes resistance to acids and other corrosive chemicals.

But one property is important chiefly in its relationship to other properties. That's why we say, with GEON it's the *combination* of properties that counts. Examine this list. Try to imagine the thousands of combinations that can be obtained from it.

Products of GEON can be made resistant to water, oil, grease, acids, alkalies, sunlight, cold, heat, aging, air, ozone, abrasion, flame, mildew, creasing and many others. They may be permanently flexible, waterproof, light weight, odorless, tasteless. They can be made in a wide range of colors. And they can be heat sealed.

GEON can be extruded, pressure or injection molded. It can be calendered or cast into sheet or film. It may be used as a coating for textiles and papers of all kinds. Its almost limitless applications extend into the plastics, packaging, textile, food, rubber, paper, clothing, shoe and many other fields. Probably many of its most important applications have yet to be developed.

Right now all the GEONS are subject to allocation by the War Production Board. Limited quantities may be had for experiment. And our development staff and laboratory facilities are available to help you work out any special problem or applications. For more complete information write Department HH-1, Chemical Division, The B. F. Goodrich Company, 324 Rose Building, E. Ninth and Prospect, Cleveland 15, Ohio.

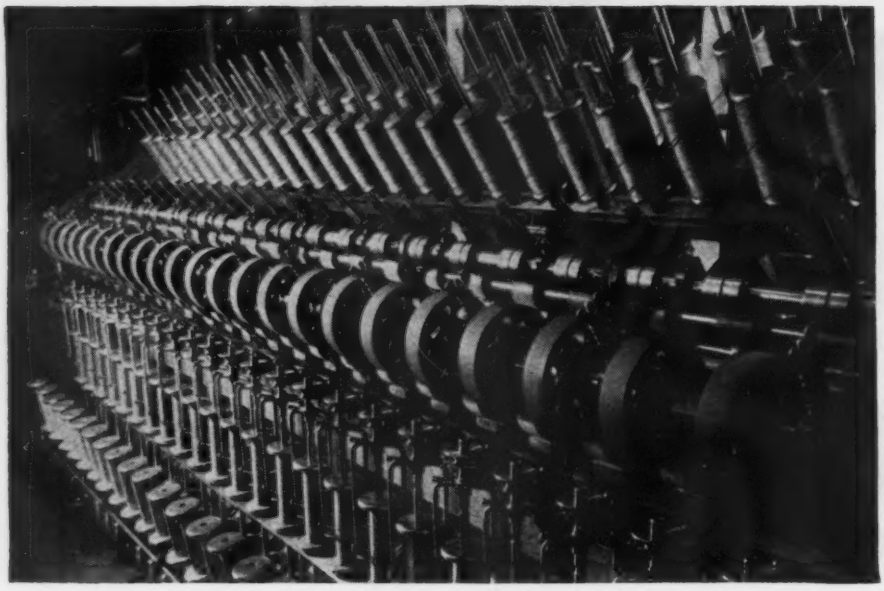
Geon
Polyvinyl Materials

CHEMICAL DIVISION
THE B. F. GOODRICH COMPANY
ROSE BUILDING, E. NINTH & PROSPECT, CLEVELAND 15, OHIO

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. JANUARY, 1945

RESEARCH DEPARTMENT UNIQUELY EQUIPPED



The Textile Research Department of the American Viscose Corporation at Marcus Hook, Pa., is the only project of its kind in America. One of the unique features of this Department is its equipment. Full size commercial machinery for practically every operation in the textile industry is installed here. Shown above is a Bradford worsted rover, typical of the equipment with which the Department works.

NUMBER ON "CROWN"* TESTED TAG SERVES IMPORTANT FUNCTION

The serial number on the back of each CROWN Tested Tag performs an important service for CROWN Tested licensees and manufacturers using the CROWN Tested identification.

The number originates on the Confirming Order form issued by A. V. C. to the converter-licensee when his cloth leaves the greige mill. On this form he gives all the information the finisher-licensee will need in order to finish the cloth to CROWN Tested specifications.

"CROWN" TESTED
FABRIC containing
100% VISCOSE
RAYON
This "Crown" Tested label is awarded only to fabrics containing "Crown" Rayon, after they have passed the "Crown" Tests for serviceability. These tests are determined by the intended use of the fabric. For complete information on tests, address
AMERICAN VISCOSE CORPORATION
Producers of "Crown" Rayon yarns and staple fibers
350 Fifth Avenue, New York 1, N. Y.
This tag is serially numbered and has been recorded against specific merchandise. It must not be used on merchandise other than that for which it has been released.
No. 0000

The finisher-licensee receives two copies of this form. One he keeps for his own use. The other he sends to A. V. C.—stating on it the yardage of the cloth *after it is dyed and finished*.

Then on that *finished yardage* figure—and on that alone—is CROWN Tested identification issued.

In other words, the converter tells A. V. C. the type of garment to be made from the cloth, the manufacturer who will cut it, and how much each garment will require. Then that manufacturer receives exactly enough CROWN Tested Tags to label the garments cut from that finished yardage. And of course each tag bears the proper serial number—the number identifying that particular dye lot.

Thus, the whole CROWN Tested procedure is tied together by this system of serial numbers. Any desired information on any dye lot can be traced through its number.

RAYON TIRE PROGRAM PROGRESSES

The American Viscose Corporation's plants at Lewistown, Pa., and Parkersburg, W. Va., have completed installing cord twisting machinery and looms for weaving tire cord fabric. This equipment was installed at the request of the War Production Board.

In June, 1944, the Lewistown plant completed conversion of a portion of its yarn producing facilities to manufacture approximately 20,000,000 pounds annually of high-strength rayon for use in tire cord fabric. This yarn can now be twisted and woven into tire fabric by the new equipment just installed for these operations. The Parkersburg plant will obtain its high-strength yarn from the American Viscose Corporation plants at Front Royal, Va., and Marcus Hook, Pa.

Initial production of tire yarn has commenced at the new unit of the Front Royal plant. The new unit, constructed by government order, will produce approximately 57,000,000 pounds annually of high strength rayon tire yarn when in full operation. Added to the plant's previous output, this will make a total production at Front Royal of approximately 82,000,000 pounds a year.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN" TESTED
Helps provide scientific selling facts.

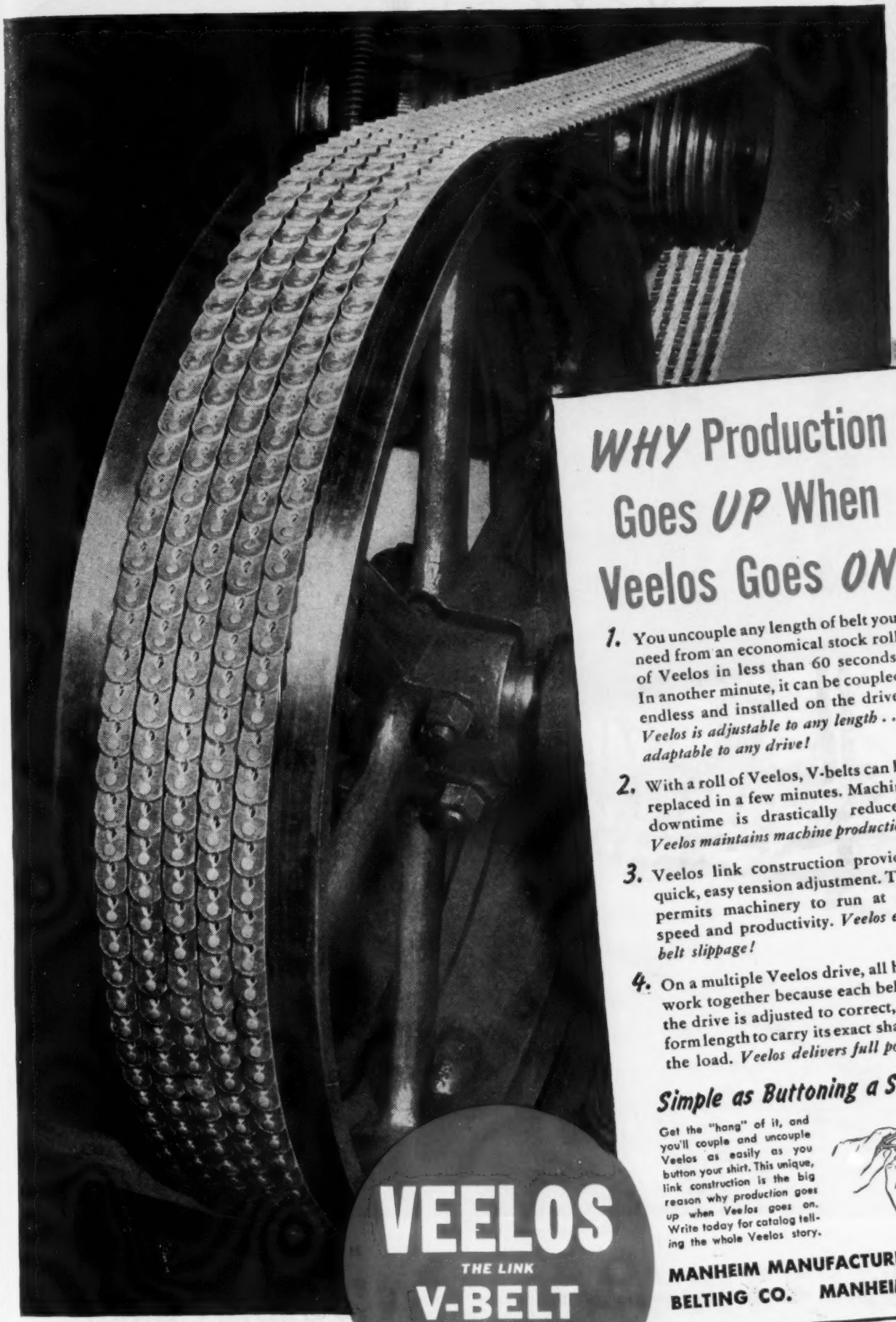
AMERICAN VISCOSE CORPORATION

Producer of
CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: 350 Fifth Avenue, N. Y. C. 1; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

*Reg. U. S. Pat. Off.



WHY Production Goes *UP* When Veelos Goes *ON*

1. You uncouple any length of belt you need from an economical stock roll of Veelos in less than 60 seconds. In another minute, it can be coupled endless and installed on the drive. *Veelos is adjustable to any length . . . adaptable to any drive!*

2. With a roll of Veelos, V-belts can be replaced in a few minutes. Machine downtime is drastically reduced. *Veelos maintains machine production!*

3. Veelos link construction provides quick, easy tension adjustment. This permits machinery to run at full speed and productivity. *Veelos ends belt slippage!*

4. On a multiple Veelos drive, all belts work together because each belt on the drive is adjusted to correct, uniform length to carry its exact share of the load. *Veelos delivers full power!*

Simple as Buttoning a Shirt

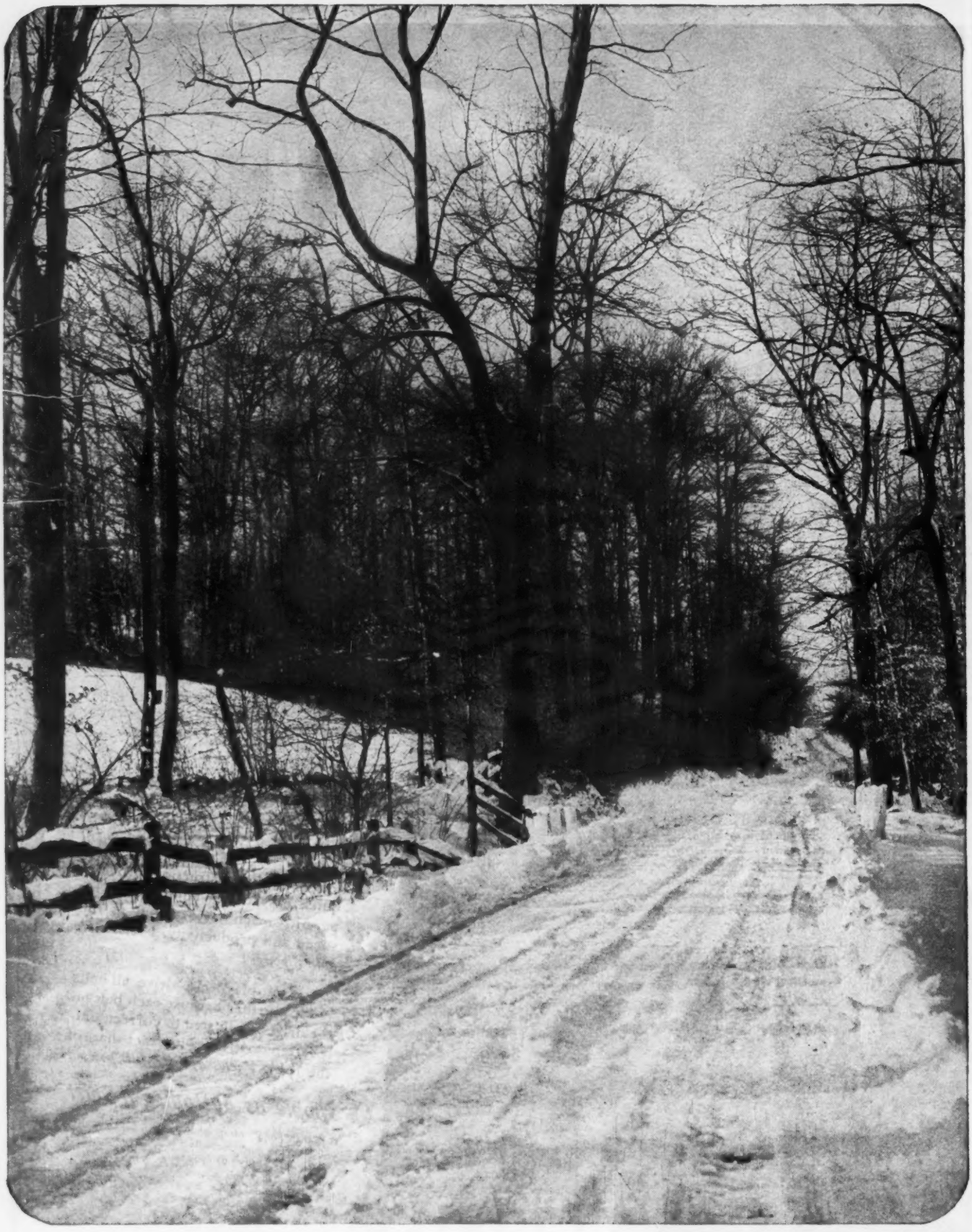
Get the "hang" of it, and you'll couple and uncouple Veelos as easily as you button your shirt. This unique, link construction is the big reason why production goes up when Veelos goes on. Write today for catalog telling the whole Veelos story.

MANHEIM MANUFACTURING & BELTING CO. MANHEIM, PA.

VEELOS
THE LINK
V-BELT

Adjustable to any Length
Adaptable to any Drive

LINK CONSTRUCTION UPS PRODUCTION



May the New Year road lead to a lasting peace . . . and the return of all things that are cherished in the hearts of men.

HOWARD BROS. MFG. CO.
WORCESTER, MASS.

Harry C. Bdey
President

Magnesium Warp Beams crowd more work into an hour

Mazlo Magnesium warp beams are time-savers. Their extremely low weight speeds up the warping operation by permitting faster starts and stops. Their permanent dimensional accuracy reduces vibration and results in better warps.

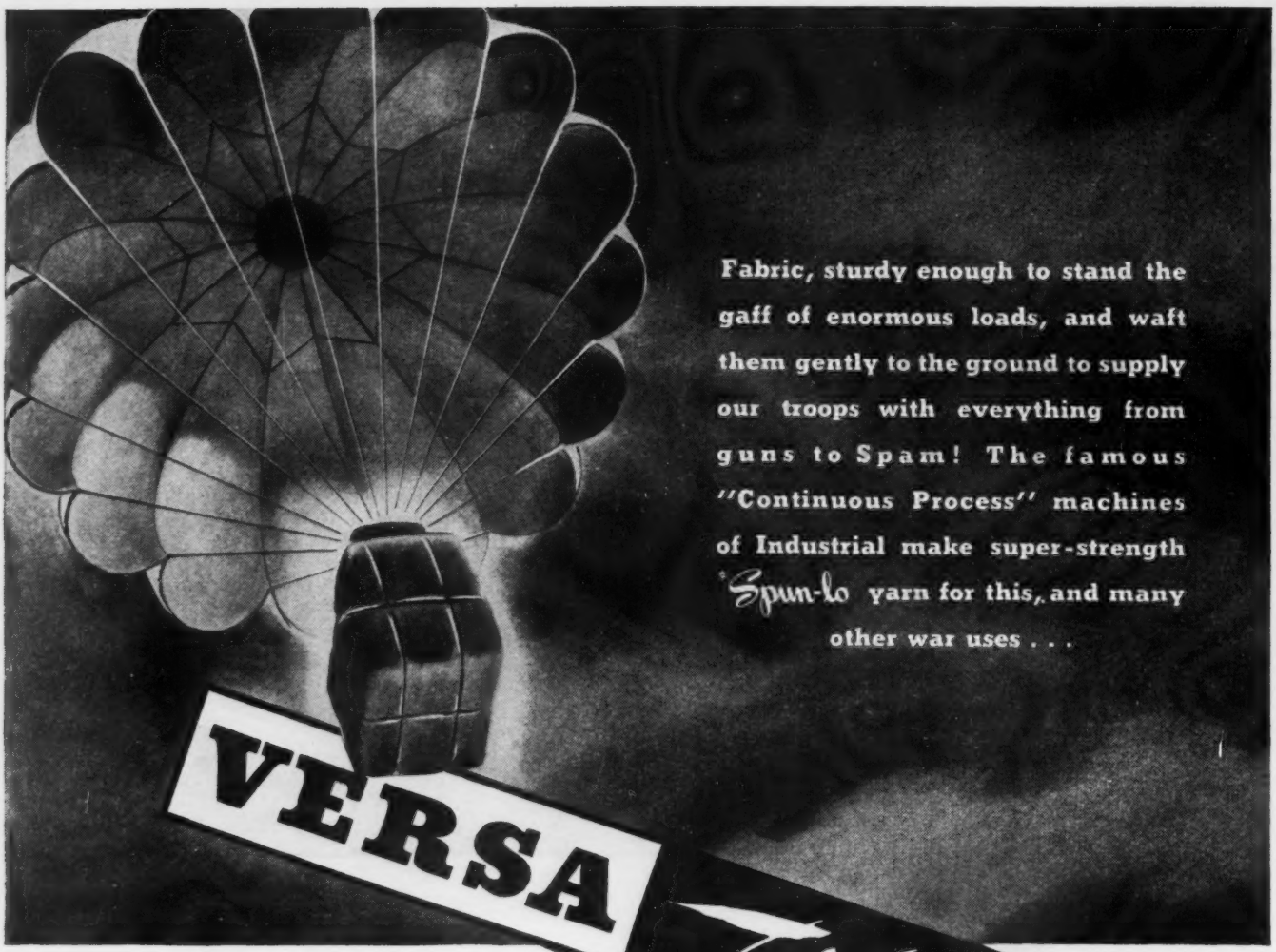
Because of the high strength and stiffness of Mazlo Magnesium warp beams, they are able to withstand the tremendous forces exerted by modern yarns. A periodic waxing gives adequate surface protection against moist mill atmospheres. Maintenance cost is low.

For information on magnesium tricot warp spools, section beams, loom beams, edge spools, and jack spools, write Aluminum Company of America, Sales Agent for Mazlo Magnesium warp beams, 1705 Gulf Building, Pittsburgh 19, Pennsylvania.

MAGNESIUM MAZLO PRODUCTS

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA


Fabric, sturdy enough to stand the gaff of enormous loads, and waft them gently to the ground to supply our troops with everything from guns to Spam! The famous "Continuous Process" machines of Industrial make super-strength *Spun-lo yarn for this, and many other war uses . . .
VERSA
tility

. . . . these very same machines, produce *Spun-lo yarns of the finest denier for all manner of charming underthings, dresses, linings, robes and gowns. (Not much civilian *Spun-lo now—Uncle Sam needs most.)

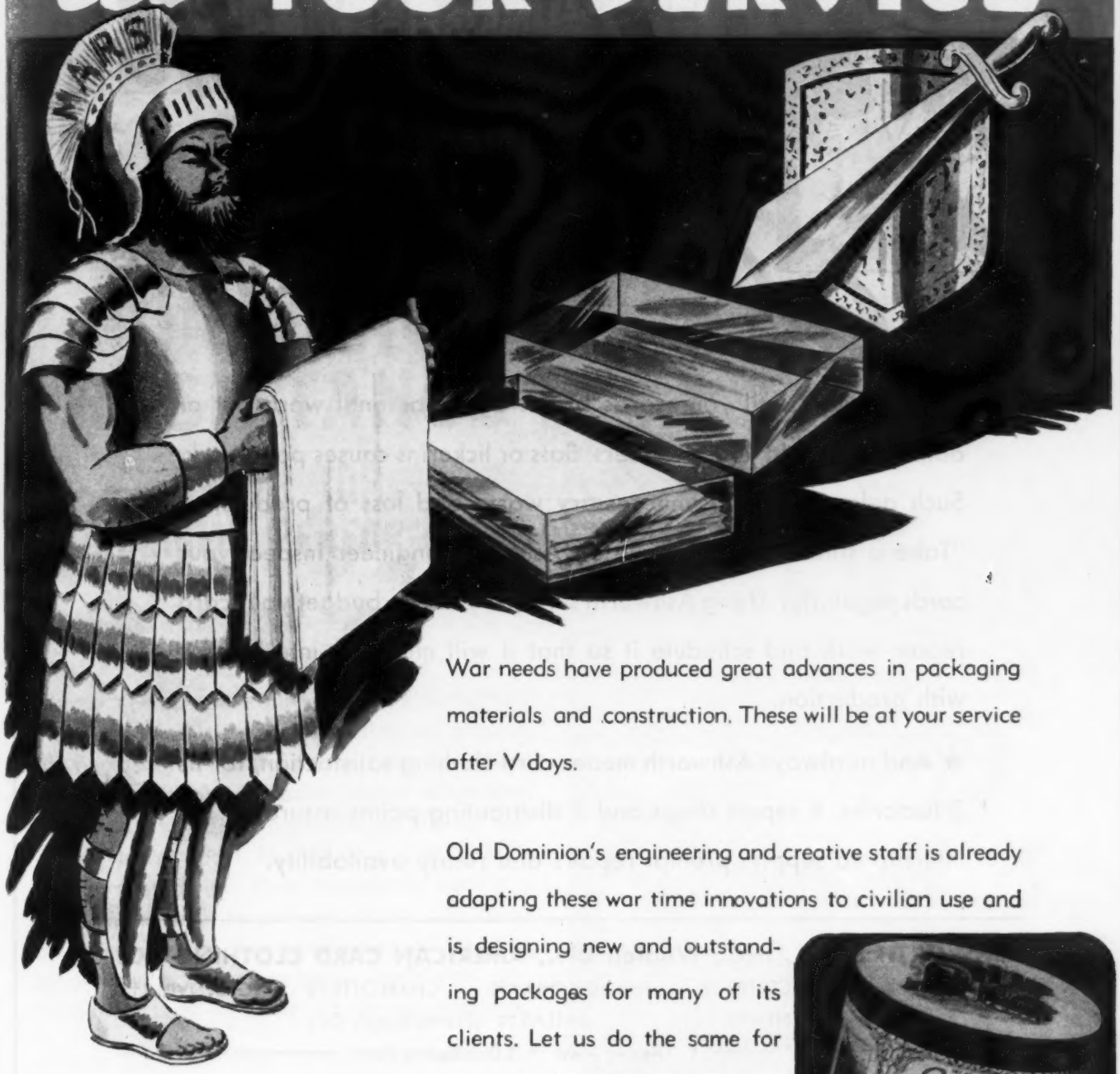
All "Continuous Process" yarns have this in common: they are strong, uniform to an amazing degree, knot-free, and run *efficiently* in your mill.

Industrial RAYON CORPORATION
Makers of Spun-lo RAYON YARN
BY THE

*Reg. U. S. Pat. Off.

CLEVELAND, OHIO • NEW YORK OFFICE, 500 FIFTH AVENUE

at YOUR SERVICE



War needs have produced great advances in packaging materials and construction. These will be at your service after V days.

Old Dominion's engineering and creative staff is already adapting these war time innovations to civilian use and is designing new and outstanding packages for many of its clients. Let us do the same for you so that YOUR packages may be ready for the keener competition of tomorrow.

Call On

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PLANTS IN NINE SOUTHERN CITIES

Folding Cartons • Set-Up Boxes • Convolute • Spiral Wound and Corrugated Containers

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"TAKE A STITCH IN TIME . . ."

USE *Ashworth*

CARD SURVEYS

★ Don't wait until your cards break down, or until worn out or damaged wire in your cylinders, flats or lickerins causes poor work. Such delay results in unnecessary waste and loss of production. "Take a stitch in time"; have an Ashworth engineer inspect your cards regularly. Using Ashworth surveys, you can budget your card repair work and schedule it so that it will minimize interference with production.

★ And as always Ashworth means card clothing satisfaction, for its 3 factories, 6 repair shops and 7 distributing points assure an uninterrupted supply, prompt repairs and ready availability.

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FALL RIVER *†‡ WORCESTER *‡ PHILADELPHIA *†‡ CHARLOTTE †‡ GREENVILLE †‡
ATLANTA †‡ DALLAS †‡ (Textile Supply Co.)

**Factory • †Repair Shop • ‡Distributing Point*

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed.

ASHWORTH CARD CLOTHING

ALOYCO STAINLESS STEEL VALVES

Maximum

CORROSION RESISTANCE

WITH TOP MECHANICAL PERFORMANCE

NO MALLETS... NO LEVERS... JUST TURN!

Aloyco Valves are positive in action throughout their long life. No levers, no mallets, no greases are necessary to maintain quick, easy operation. This is due to better design, closer tolerances, smoother finished surfaces. Aloyco Valves are easily taken apart for cleaning and are as easily reassembled. Even the bonnet bolting is of Stainless Steel to prevent rusting. The result of specializing in the manufacture of Stainless Steel Valves guarantees better mechanical performance as well as maximum corrosion resistance.

Aloyco Stainless Steel Valves are made in a wide range of alloys to provide maximum corrosion resistance under any particular conditions. They are made of solid stainless steel which gives them a much longer life than valves made only partly of corrosion resistant materials.

There's an Aloyco Valve for almost every type of corrosive fluid control. They are available for new installations on high priority and for maintenance and repair under M. R. O. regulations.

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VALVES and FITTINGS

GATE VALVES • GLOBE VALVES
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LEVER THROTTLE GATE VALVES
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DYEING & FINISHING

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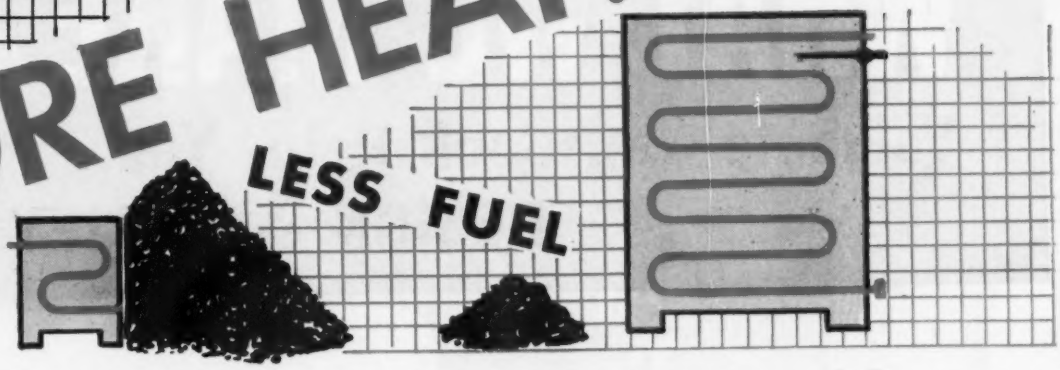
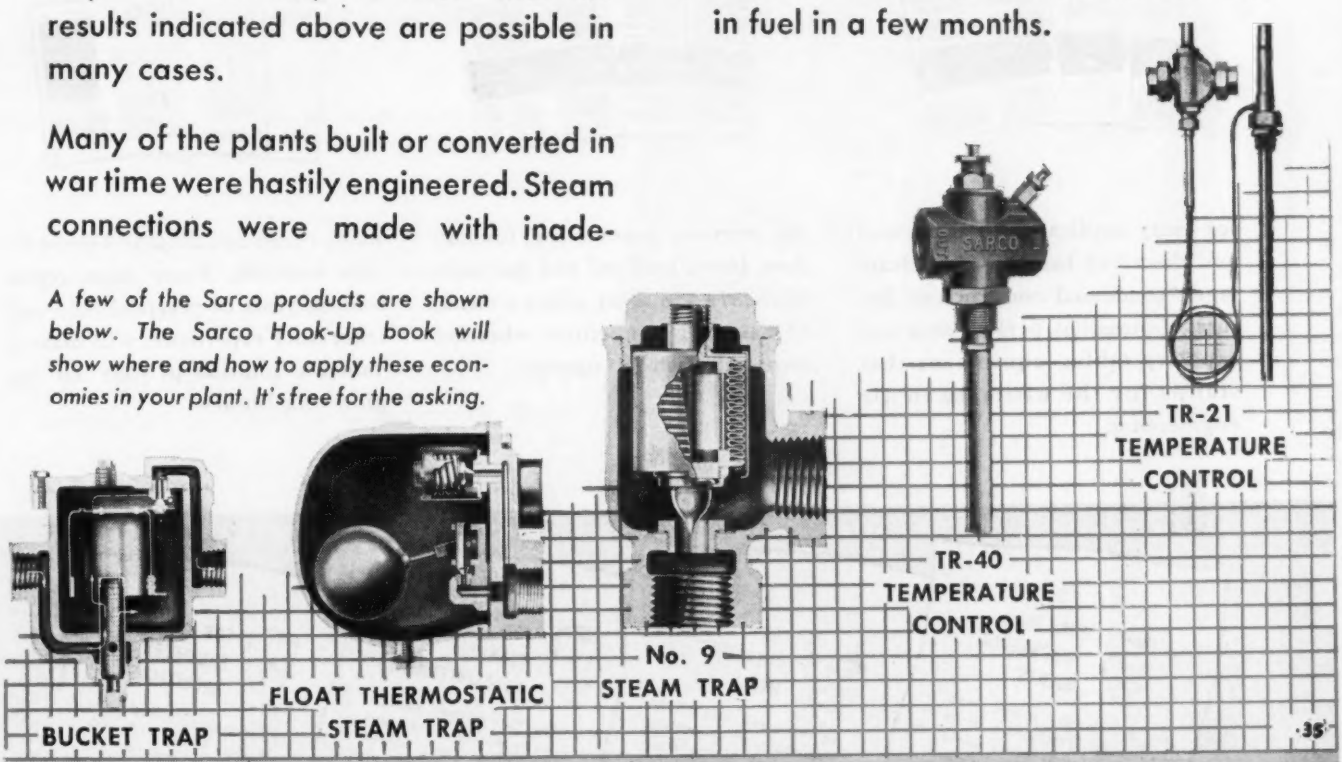


with correct steam traps and temperature control

When a coal company uses Sarco Control at the mouth of the mine to save fuel, there must be a reason. When textile, plating, chemical and scores of heavy heat using industries tell us that their output with existing process equipment was materially increased with correct steam traps and control, we know that the results indicated above are possible in many cases.

Many of the plants built or converted in war time were hastily engineered. Steam connections were made with inadequate help and frequently the right steam traps and control were not even available in the time allotted. Already Sarco engineers have found many cases where the addition of a few dollars' worth of steam traps can increase the production of equipment that cost many thousands of dollars and save their cost in fuel in a few months.

A few of the Sarco products are shown below. The Sarco Hook-Up book will show where and how to apply these economies in your plant. It's free for the asking.



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SARCO COMPANY, INC.
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NEW YORK 17, N. Y.

Represented in Principal Cities

SARCO Saves Steam

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WHAT WE MAKE *and*

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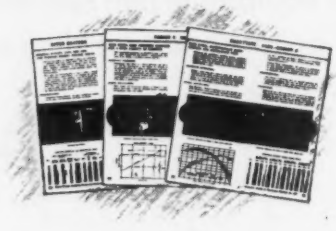
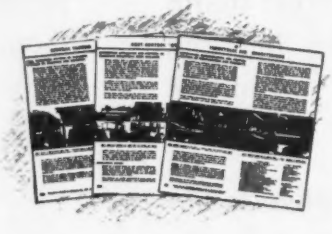


for every application is illustrated and described here, giving advantages, condensed construction features, dimensions, performance and capacity tables—equipment that stands for the ultimate in air engineering.

36 pages of APPLICATIONS

Leaf through these pages to find how "Air at Work" steps up efficiency of plants and processes. Typical examples show how air handling equipment that's properly engineered and installed purifies the air, heats or cools it, makes it wet or



dry, conveys, removes fog, fume or dust; burns coal, oil and gas *more efficiently*—in short, offers a means of mastering competition wherever men and machines operate.

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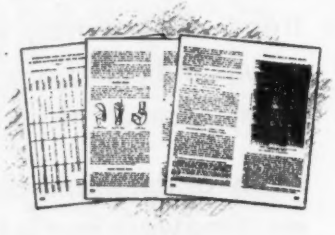
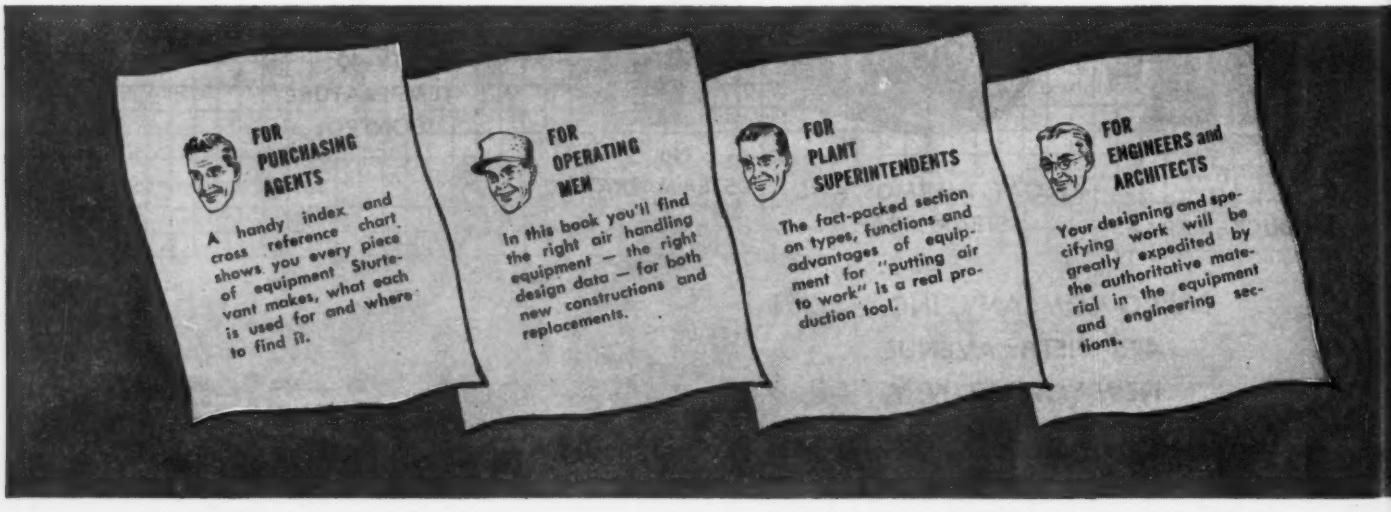
You'll have occasion to refer to this section again and again for its wealth of helpful air engineering data. Included here are many frequently used air laws and formulas, many tables and design shortcuts in more convenient, more usable form,



many charts and diagrams *never before available.* Every page, representing years of practical field and laboratory experience, will make a valuable addition to your Air Engineering library.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IT'S ALL UNDER ONE COVER — the essential information you need when you design, specify or order air handling and allied equipment or systems —as well as aid in choosing subjects on which you want detailed information or competent engineering help.

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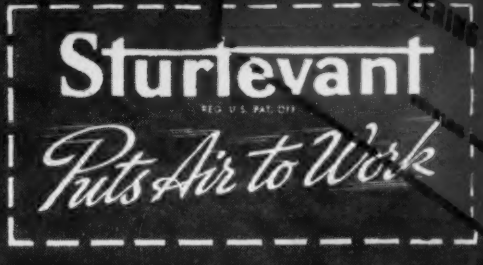
This book will be extremely helpful in selecting equipment that assures maximum efficiency for all your air handling jobs.



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More helpful than ever, now that war deferred maintenance must be reckoned with, Crane *complete* piping materials service simplifies every step of piping rehabilitation. One reliable source—your Crane Branch or Wholesaler—supplies everything you need, be it a single fitting or a complete new system. In brass, iron and steel materials for all power and process piping applications, the Crane line provides the world's most comprehensive selections.

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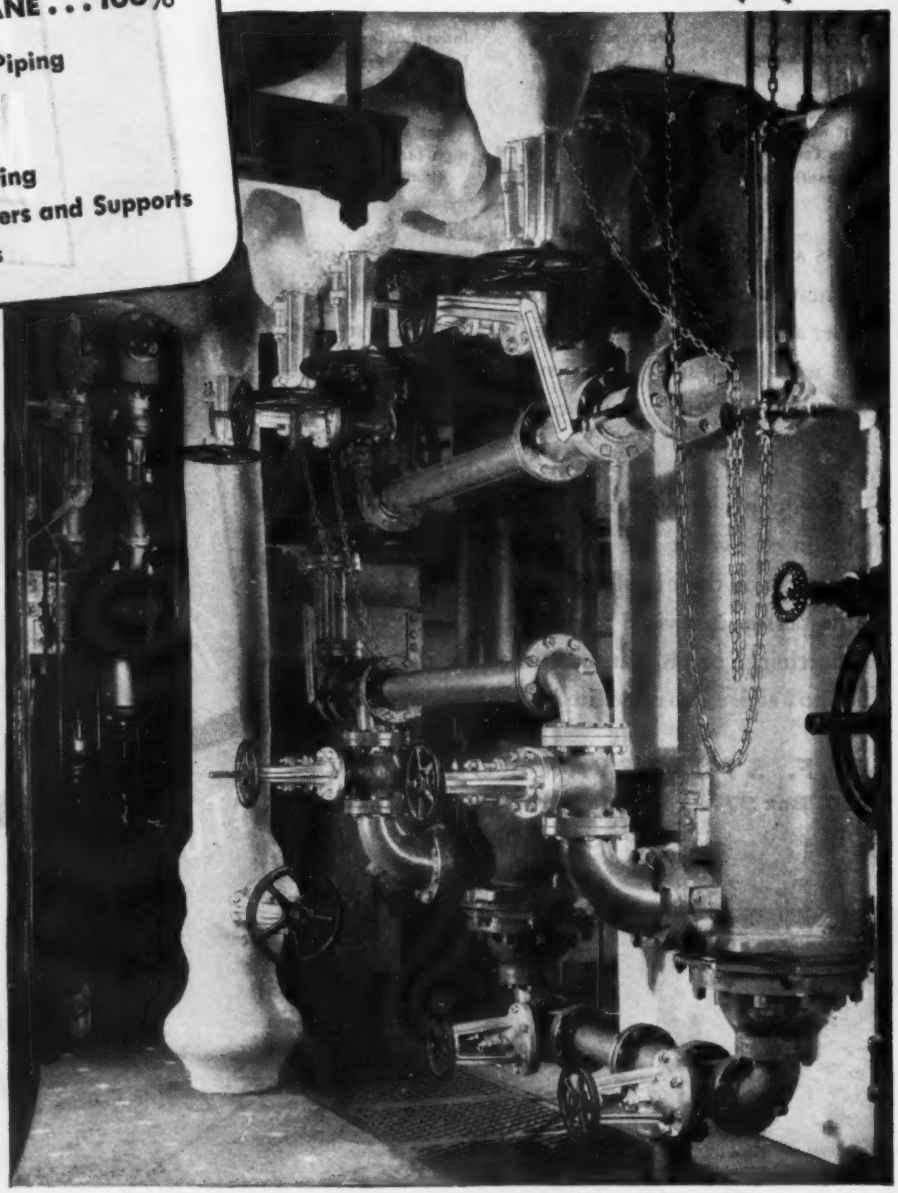

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The same high quality protects every part of piping systems when Crane materials are used throughout. In Crane Steel Gate Valves, for example, straight-through ports permit unrestricted flow. Severest line stresses are overcome by sound and rugged body castings. Smooth operation is maintained by a ball joint type stuffing gland, strong tee-head disc-stem connection, and ample stem bearings. Positive seating is assured by extra long disc guide ribs.

CRANE

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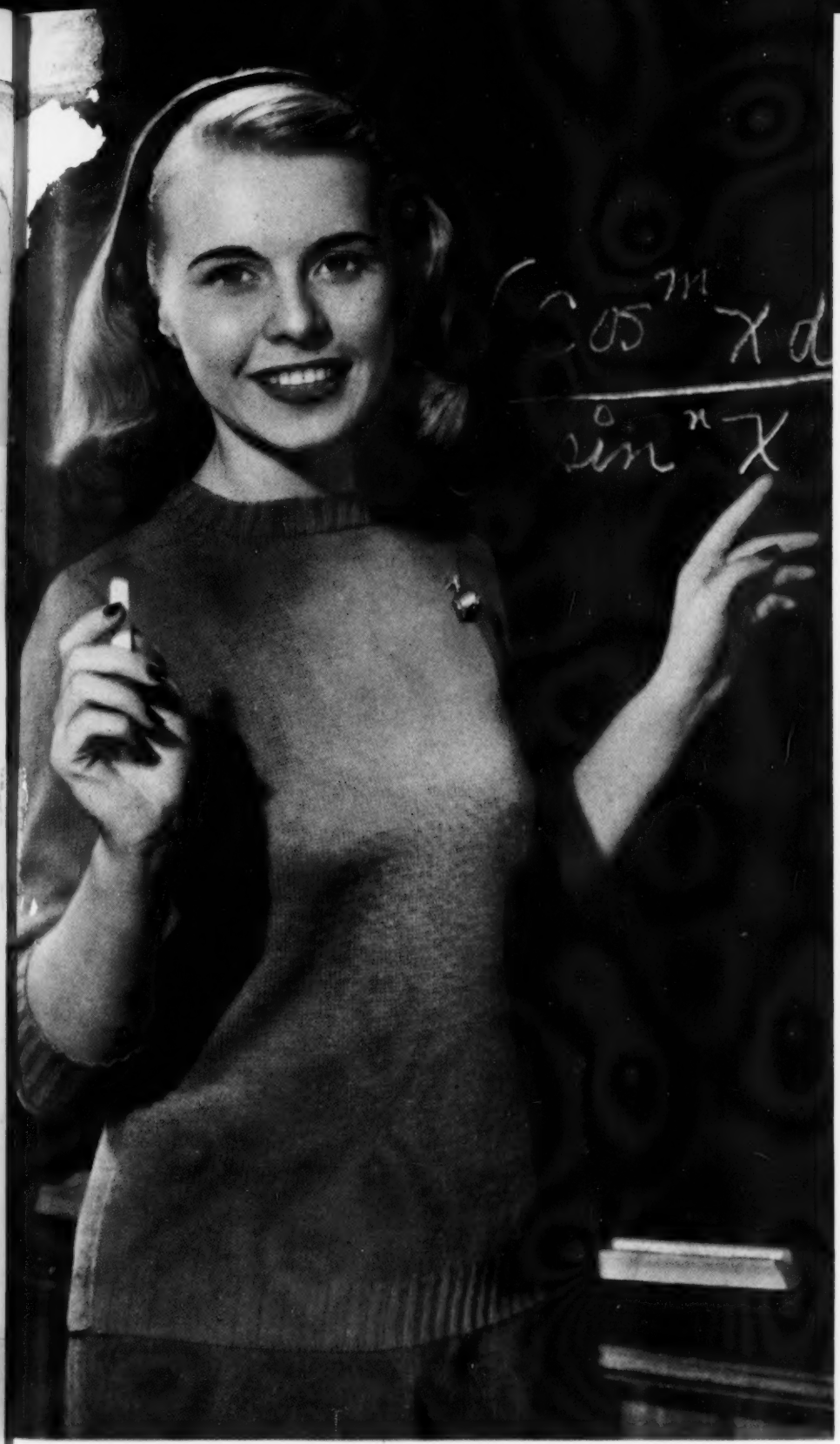

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to many a postwar sales problem will be found in better knitting. Let the machine-controlled quality of Torrington Needles help you improve the quality of your knitted products and the efficiency of your machines.

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Established 1866
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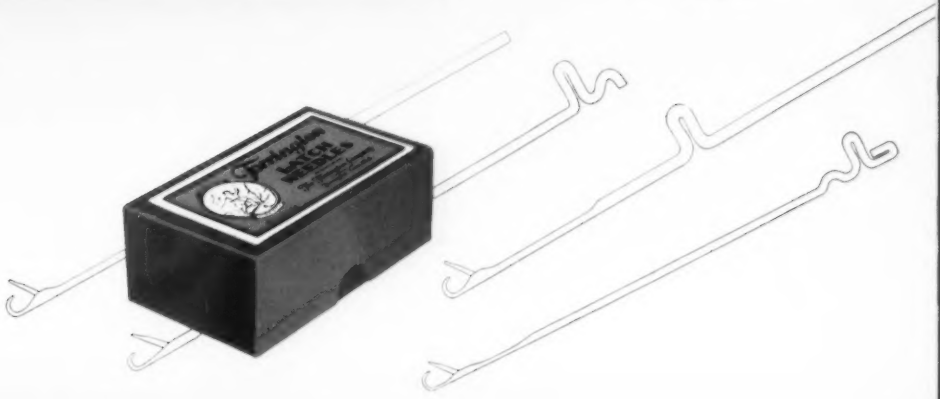
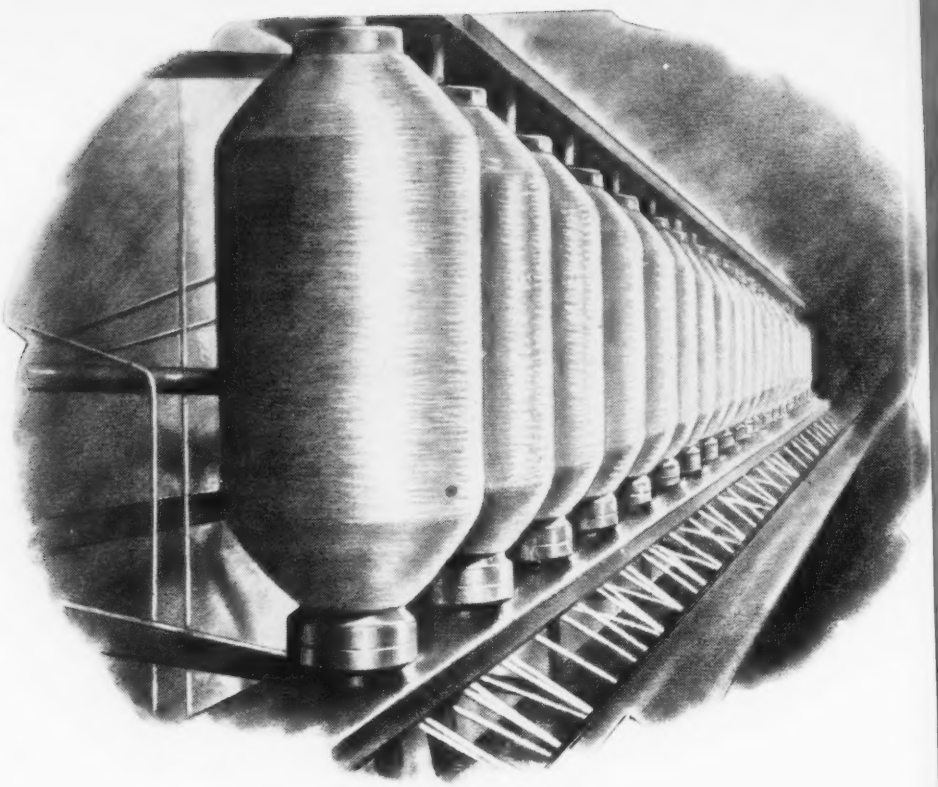
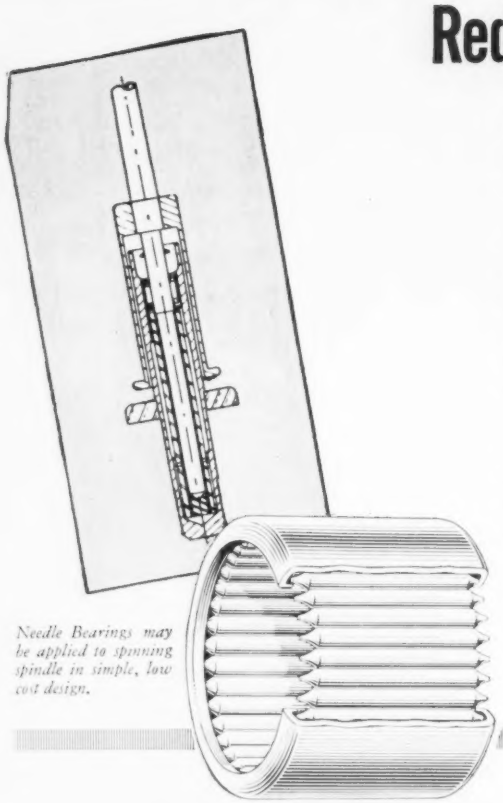




Needle Bearings can Increase Efficiency, Reduce Costs in Spinning Spindles



Needle Bearings may be applied to spinning spindle in simple, low cost design.

Higher spindle speeds, heavier package loads and longer periods of sustained operation impose demands on spinning spindles that can be met by anti-friction Needle Bearings.

Small in size, light in weight and compact; easily and efficiently lubricated without danger of excess oil or grease, these modern anti-friction bearings have already demonstrated their merits *in design and performance* on spindles and other important Textile machine applications. Results are being measured in increased operating efficiency, lower operating costs, and in reduced maintenance and service attention.

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General Chemical "B&A" Reagent Acids and Ammonia

Quality in quantity shapes success...increases product potentialities. That's why, wherever *reagent grade mineral acids or ammonia in commercial quantities* are specified for industrial operations, General Chemical "B&A" high purity products are an outstanding choice nation-wide.

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General Chemical Reagent Acids and Ammonia are produced by the Company's Baker & Adamson Division, makers of laboratory reagents and fine chemicals since 1882. The experience of this Division with high quality chemicals embraces over 1,000 purity products.

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"B&A" Sulfuric Acid, Reagent, A.C.S.
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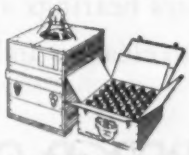

Quantities: "B&A" Reagent Acids and Ammonia are available in carboys as well as in five-pint and one-pound bottles, which are obtainable in case lots or less.

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If RUST is one of your aggravating problems, you can solve it by using RUST-O-LENE A, the new, highly successful rust-proofing lubricant developed by Sinclair.

Sinclair RUST-O-LENE A is a general-purpose lubricating oil compounded with a special rust preventive. It lubricates bearings and other moving parts, also cleanses and functions as a rust preventive. In addition, RUST-O-LENE A tends to remove existing rust and prevents future accumulation.

RUST-O-LENE A was developed after long research and experimental work under actual operating conditions. Learn how it can combat rust and machine wear . . . prevent fabric staining. Write for brochure.

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Will Stay Locked Up... Unless We All Help to

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... creating more jobs with high wages by producing *more and better products at a lower cost*

In spite of the pent-up demand created by the past few years of high earnings and restricted purchasing — John Q. Public is going to be mighty cagey when it comes to cashing in his war bonds or depleting his savings account.

The great amount of publicity given to the development of new products has sold future buyers on the fact that American industry and genius will soon deliver better, new products at a lower cost. And, having done without this long, John Q. Public is going to "wait and see."

Realizing this fact, leading manufacturers of production and processing equipment are modernizing their designs with every determination of helping to solve this vital No. 1 problem of all industry.

Business leaders know that only through soundly stimulated demand can they create increased production — and provide more jobs with high wages.

Century Motors Help to Reflect Lower Costs

Of course, machine tools and other processing equipment will play an important part in building and maintaining postwar prosperity — but electric motors are production tools, too, because they are a component part of the machines they drive.

Century Motors offer specialized advantages such as — a wide variety of motor types to match the functional characteristics of production operation—unusual freedom from vibration that contributes to closer tolerances in high speed, precision production—motor protection features that mean uninterrupted production in spite of hazardous atmospheres—permanently quiet operation that results in less waste of human energy—and many other specialized features that reflect lower final costs.

Century's Organization Helps, Too

Century's national organization of Motor Specialists has long helped appliance manufacturers and machine tool builders to effect savings in original design and in production output costs. They can help you best when your machines or your products are still in the blueprint or experimental stage.

Everyone Benefits from Century's Performance

Whether you are a manufacturer of consumer products or industrial equipment, a wholesaler or retailer—you, too, have a direct or indirect stake in how well Century Motors can help others in solving the problem of delivering a better product at a lower cost.

Act Now — If you are a manufacturer of Motorized Equipment or Appliances, it will pay you to call your nearest of Century's 31 branch offices.

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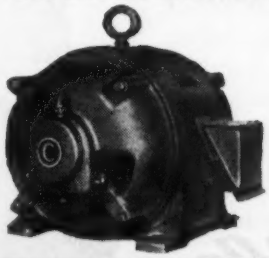

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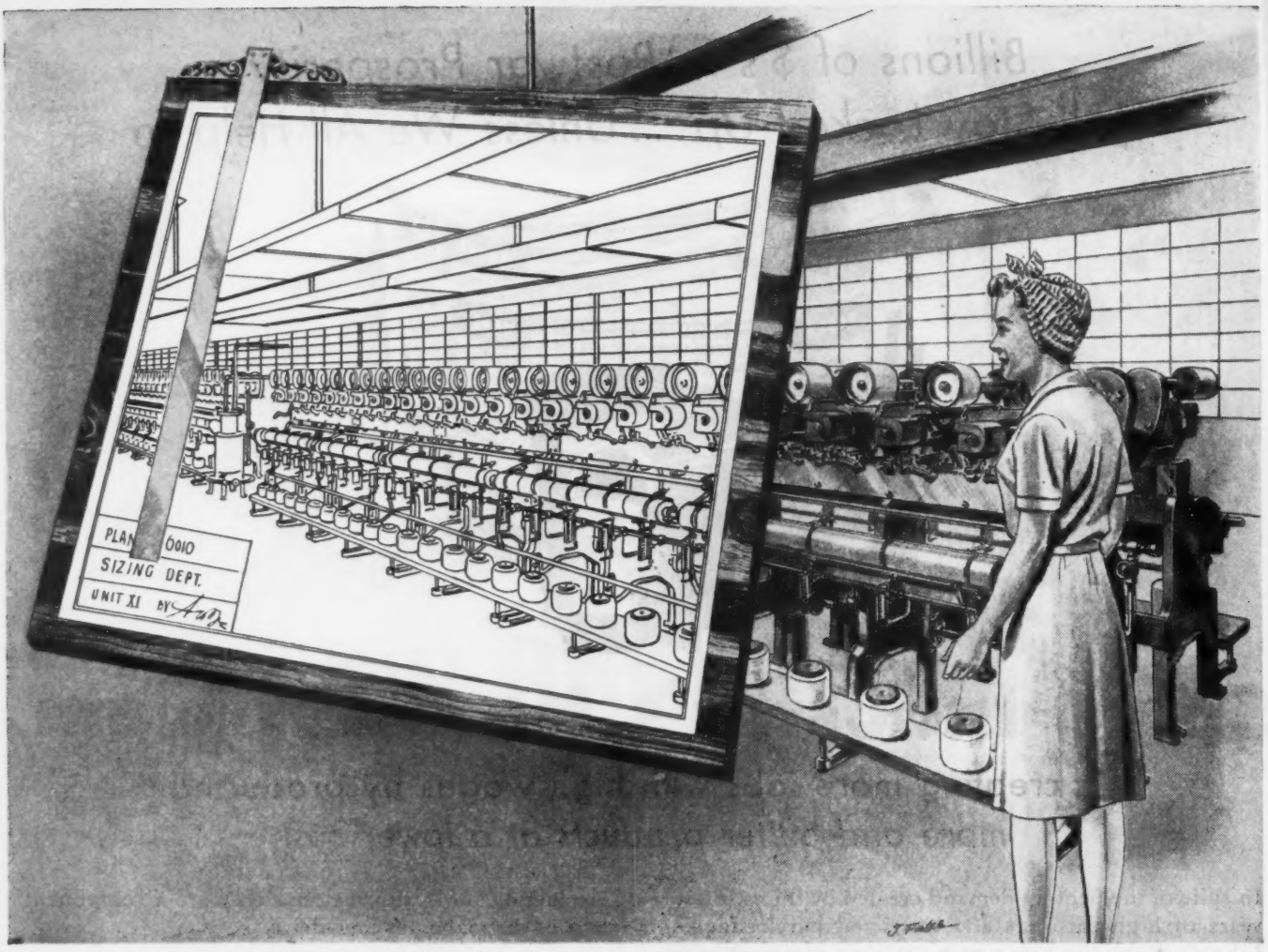

Tomorrow's Working Efficiency

is on Engineers' Drawing Boards Today

As early users of humidity control, the textile industry pioneered in the use of industrial air conditioning.

Often, however, the combination of high humidity and high temperature has an undesirable effect upon workers' health, efficiency and alertness.

Temperature, humidity, air cleanliness, circulation and ventilation are all controlled for best effect upon product and worker alike, with Modern Air Conditioning. That's why so many textile mill executives place it high on the list of essentials, in their postwar plans.

Modern Air Conditioning means Westinghouse—and its years of pioneering research and engineering experience.

For essential war uses in factories, hospitals, airports, military bases, etc., Westinghouse Air Conditioning and Industrial Refrigeration Equipment is available today.

For executives, architects and engineers now planning postwar building and modernizing, dependable data and competent application engineering assistance are ready.

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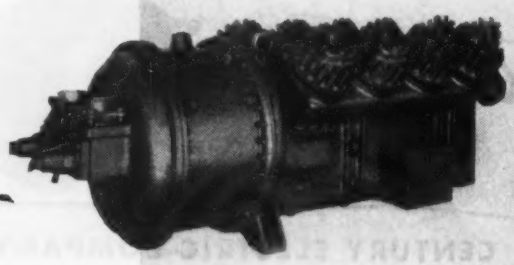
HERMETICALLY-SEALED FOR DEPENDABILITY

Westinghouse pioneered the Hermetically-Sealed Compressor. Hermetically-sealed means light weight · small size · low maintenance and operating costs · high efficiency · long life.



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Air Conditioning

Westinghouse presents John Charles Thomas • Sunday 2:30 E.W.T., N.B.C.
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Every Important Installation
of a Package Dyeing Machine
from 1937 to 1942 Was a
SMITH-DRUM

Soon Again

This outstanding machine will be available. As the most notable advancement in package dyeing equipment in the past twenty years, this machine introduced 5 major features never before incorporated in a package dyeing machine. These provided faster production and better results at lower cost. New improvements make the post-war models still more desirable. Since we are already booking orders for this and other Smith-Drum Machines, we urge you to place your order soon to avoid a long wait for delivery.

Complete information will be sent upon request. Write to . . .

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SMITH-DRUM Textile Machines

for hosiery dyeing, skein dyeing, package dyeing, beam dyeing, piece goods dyeing, package drying, skein mercerizing, warp mercerizing, hosiery inspection.

How to determine more accurately the Corrosion-Resistant materials best suited to your operations

The answer to a new or unusual corrosion problem . . . where previous service information is not available . . . may be secured with considerable accuracy in your plant by a "SPOOL TEST."

The method, developed by INCO's Technical Service, conforms closely to the A.S.T.M. Recommended Practice for Conducting Plant Corrosion Tests (A.S.T.M. Designation A-224-411). It features spool-type specimen holders which permit tests to be made in operating equipment under actual conditions of service.

Of simple construction and readily obtainable, these spool-type holders are adaptable to a wide variety of plant equipment. Exposure of the different metal specimens—singly, or in galvanic combination, welded or joined in some other way – may be made in liquids, vapors or slurries. Test data are obtained at low cost, with a minimum of expert attention.

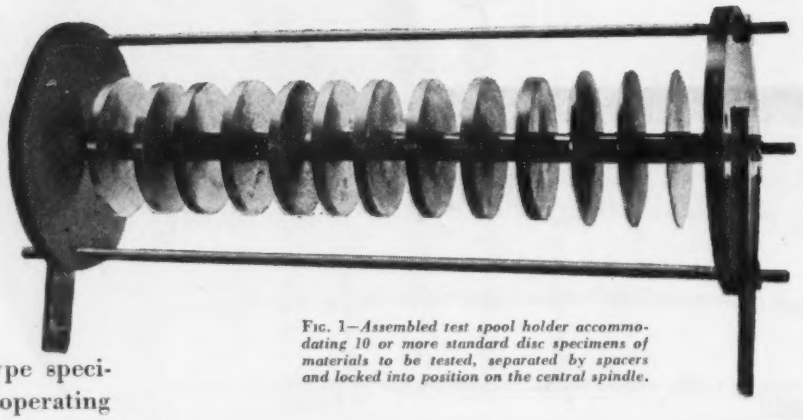


FIG. 1—*Assembled test spool holder accommodating 10 or more standard disc specimens of materials to be tested, separated by spacers and locked into position on the central spindle.*

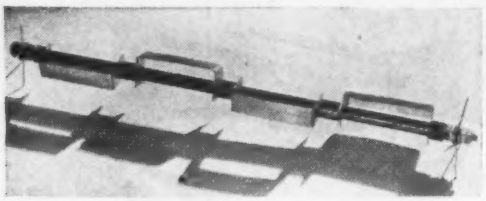


FIG. 2—*Modified spool type holder for corrosion testing inside pipes as small as 1¼" inside diameter. Strips are substituted for the standard discs. Does not seriously impede liquid flow.*

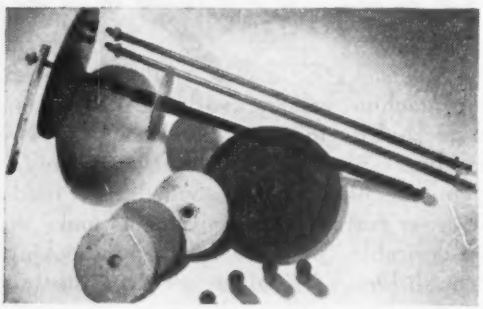


FIG. 3—*Group of specimens and insulators used in spool type holde for testing corrosion.*

Compared with improvised testing methods in which significant corrosion factors may be overlooked, INCO Test Spools make corrosion tests more reliable by eliminating errors due to unsuitable test conditions, non-uniform exposure and accidental galvanic contacts.

The test can be conducted without interfering with production and for any length of time considered desirable. Upon completion, the rates of corrosion, and tendencies to pitting, concentration-cell corrosion and galvanic action can be determined.

• • •

How to arrange for an INCO Test Spool

To determine whether or not a test must be made, all factors of the problem should be assembled, preferably on an INCO Corrosion Data Work Sheet and sent to INCO Technical Service.

Testing is often unnecessary, since INCO Corrosion Data Files contain data from more than 2,000 plant tests on more than 40,000 metal and alloy specimens. These files cover hundreds of other materials in addition to INCO'S own products . . . Monel, Nickel and Inconel.

If a test is advisable, a test-spool is assembled with suitable specimens. It is then intalled either by an INCO Technical Service representative or by your own engineers.

An A.S.T.M. paper "Corrosion Testing Methods," which gives more detailed information about this test method is available—write for Technical Bulletin T-10. Copies of the Corrosion Data Work Sheet will also be sent on request. The International Nickel Company, Inc., 67 Wall Street, New York 5, N. Y.

★ ★ ★ ★ ★ **INCO NICKEL ALLOYS** ★ ★ ★ ★ ★

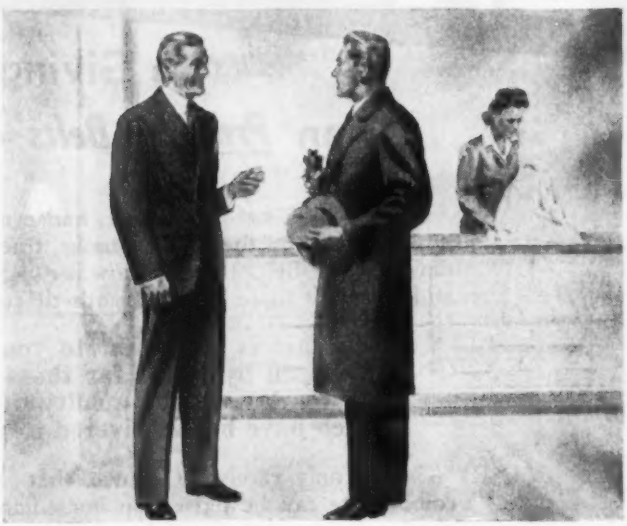
MONEL • "K" MONEL • "S" MONEL • "R" MONEL • "KR" MONEL • INCONEL • "Z" NICKEL • NICKEL

Sheet...Strip...Rod...Tubing...Wire...Castings

1. *A business man asks . . .*

2. *A professional man inquires . . .*

3. *An architect wonders . . .*



4. *A department store manager asks . .*

Does OTIS still make elevators?

Certainly! We've never been *out* of the elevator business, although our engineering and manufacturing facilities have been working 100% for the Armed Services.

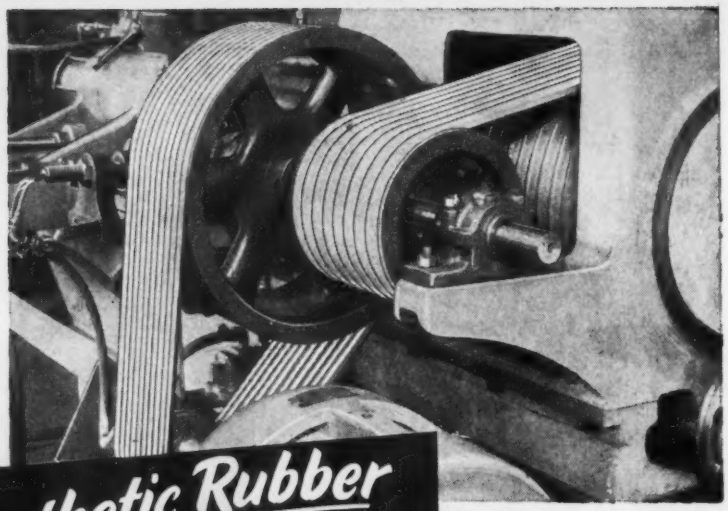
It is true that we have manufactured vast quantities of parts for guns, ships and aircraft for the Army, Navy and Air Corps but, because vertical transportation is essential in the production and handling of munitions of war and in the operation of aircraft carriers, we have continued to produce a large volume of passenger, freight and special purpose elevators.

We have been too busy producing war goods to say much about the future — but

Now — representatives in our 244 offices are ready and waiting to work with architects, engineers, and owners in the preparation of surveys, plans and estimates on new elevator installations or the modernization, repair or maintenance of existing facilities.

Your action now will expedite future deliveries. Production will begin as soon as material and labor are no longer required for war goods.

Otis ELEVATOR COMPANY
BRANCH OFFICES IN ALL PRINCIPAL CITIES



Here Is the ***Simple Reason*** *Why*

GATES *Synthetic Rubber* V-Belts

—Are Giving You Even *BETTER SERVICE* Than *Pre-War Belts* of *NATURAL RUBBER!*

NO ONE, before the war, had ever built a V-Belt that could stand the service now required by the Army's tanks, tractors, and self-propelled big guns. Gates has developed V-Belts that are now serving on army combat units all over the world—and has built these belts of synthetic rubber!

This fact is important to you now because every improvement developed by Gates for these Army belts has also been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

It is only rarely, of course, that improvements developed primarily for army combat use can be passed on immediately to the general user—but there are very good reasons why Gates has not been called upon to withhold these important V-Belt improvements from Industrial V-Belt users.

The plain fact is that no guns, no tanks, no airplanes can be produced unless V-Belts are supplied to drive the producing machines. It is equally clear that better V-Belts than ever before have been urgently needed to keep machines going on the forced-draft, war-production schedules that have had to be maintained 24 hours a day!

That is why Gates has been able to embody in the standard Gates Vulco Rope every V-Belt improvement which Gates specialized research has developed for use on the Army's motorized equipment—and that is why you are finding that your standard Gates synthetic rubber Vulco Ropes are today giving you better service than any V-Belts that were ever built before the war.

THE MARK OF *Gates* SPECIALIZED RESEARCH

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

CHICAGO 6, **ILL.**
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DALLAS 2, **TEXAS**
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NEW YORK CITY 3,
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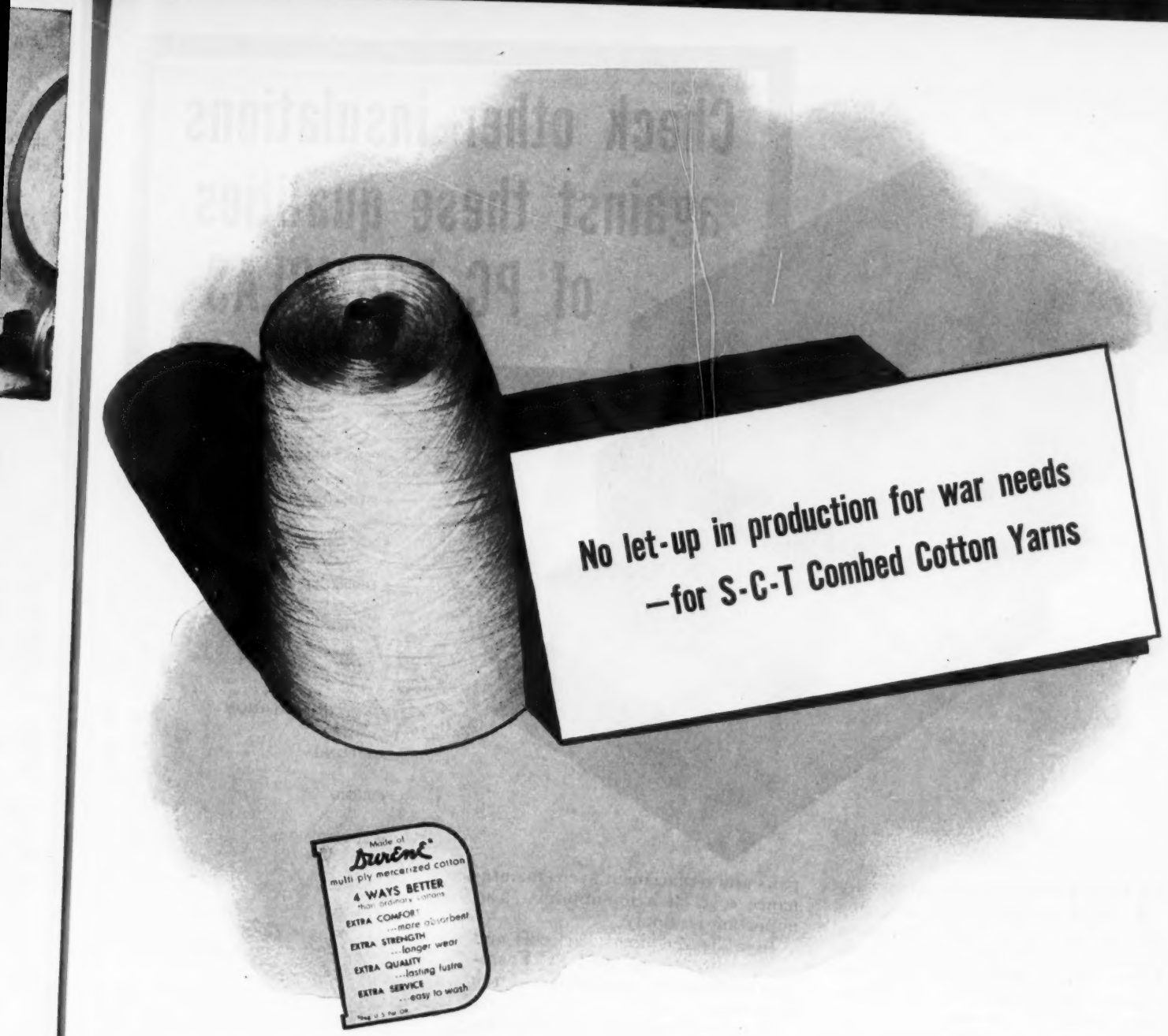
801-2 Liberty National Life Building

DENVER 17, **COLO.**
999 South Broadway

CHARLOTTE 2, **N. CAROLINA**
605 West Fifth Street

GREENVILLE, S. CAROLINA
108 W. Washington Street

ATLANTA 3, **GA.**
738 C & S National Bank Building



But when S-C-T Combed Cotton Yarns return from the wars, you can count upon their uniformity and free-running smoothness to help you turn out more marketable merchandise faster . . . garments of greater beauty, comfort and wear.

STANDARD's *absolute control* of S-C-T Yarns from cotton boll to finished cone safeguards their quality characteristics as well as your quality production. ★

BRANCH OFFICES:

New York 16, N.Y., 185 Madison Ave. Chicago 54, Ill., 940 Merchandise Mart
Greensboro, N. C., Guilford Building Reading, Pa., Reading 6262
Utica, N. Y., P. O. Box 105

Standard Durene • Selo • Preemo • Combed Saks • Threads • Combed Peelers

Speed Victory and Peace... Buy Extra War Bonds

STANDARD-COOSA-THATCHER CO.

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Sales Offices: 804-6 Lafayette Building, Philadelphia 6, Pa.

Representatives in principal Cities and in Central and South American Countries

Check other insulations against these qualities of PC FOAMGLAS

- PERMANENT
- MOISTUREPROOF
- VAPORPROOF
- FIREPROOF
- VERMINPROOF
- LIGHT WEIGHT
- EASY INSTALLATION
- STRONG
- RIGID
- ECONOMICAL

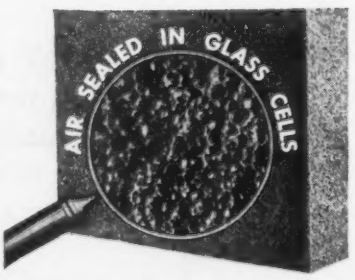
THOSE are the main reasons why PC Foamglas is in increasing demand among men who are facing insulation problems—and who also keep a sharp eye on operating and maintenance costs. With PC Foamglas, first cost is last cost.

Because it is cellular glass, PC Foamglas is impervious to attack by moisture, fumes, vermin, acid atmospheres—elements that frequently cause other insulating materials to lose efficiency. That is why its insulating properties remain unimpaired through the years. Freedom from repairs and replacement keeps maintenance costs at a minimum . . . an important economy.

In walls and floors, on roofs and equipment, strong, rigid PC Foamglas becomes an integral part of the structure.

Helpful information on various insulation problems is available in booklet form. Just check and mail the convenient coupon. We shall be glad to forward free copies of the booklets you want. Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pa.

FIRST COST IS LAST COST



ALSO MANUFACTURERS OF PC GLASS BLOCKS

On factory roofs, PC Foamglas is efficient insulation, provides a firm surface for roofing felt.

In core walls the strong rigid blocks of PC Foamglas become an integral part of the structure.

PC FOAMGLAS *Waterproof Fireproof* INSULATION

Pittsburgh Corning Corporation
Room 610, 632 Duquesne Way
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Please send along my free copies of the booklets on PC Foamglas Insulation as checked below.

Roofs_____ Walls_____ Floors_____

*Name*_____

*Address*_____

*City*_____ *State*_____

The LANASET-processed sock (at right) and the untreated sock (at left) received the same two-hour test washing with soap and soda at 140° F. The LANASET-treated sock showed no change in texture or color, keeping its "fit."

A new way to keep "fit"

The single LANASET-treated fiber (at top) indicates how this process reduces the normal tendency of an untreated wool fiber (shown below) to kink and fuzz when laundered and dried, causing felting and shrinking of the wool.

LANASET*, a synthetic melamine resin, provides a revolutionary new method of shrinkage control for wool and wool blends for socks, men's and women's sportswear, tropical worsteds, blankets, children's wear, and knitwear.

Incorporated directly into the wool fibers, LANASET forms a highly insoluble resin on heat curing. This stabilizing, permanent finish permits repeated laundering and dry cleaning without appreciable shrinkage. It reduces felting, pilling and fuzzing to a minimum.

LANASET is immediately available for full-scale trials in processing wool and blends of wool and rayon. Ask your Calco representative about LANASET, the new product for wool shrinkage control.

CALCO CHEMICAL DIVISION · AMERICAN CYANAMID COMPANY

BOUND BROOK, NEW JERSEY — NEW YORK · BOSTON

PHILADELPHIA · PROVIDENCE · CHARLOTTE · CHICAGO

*Lanaset** **FOR WOOL SHRINKAGE CONTROL THAT LETS THE WOOL BREATHE**

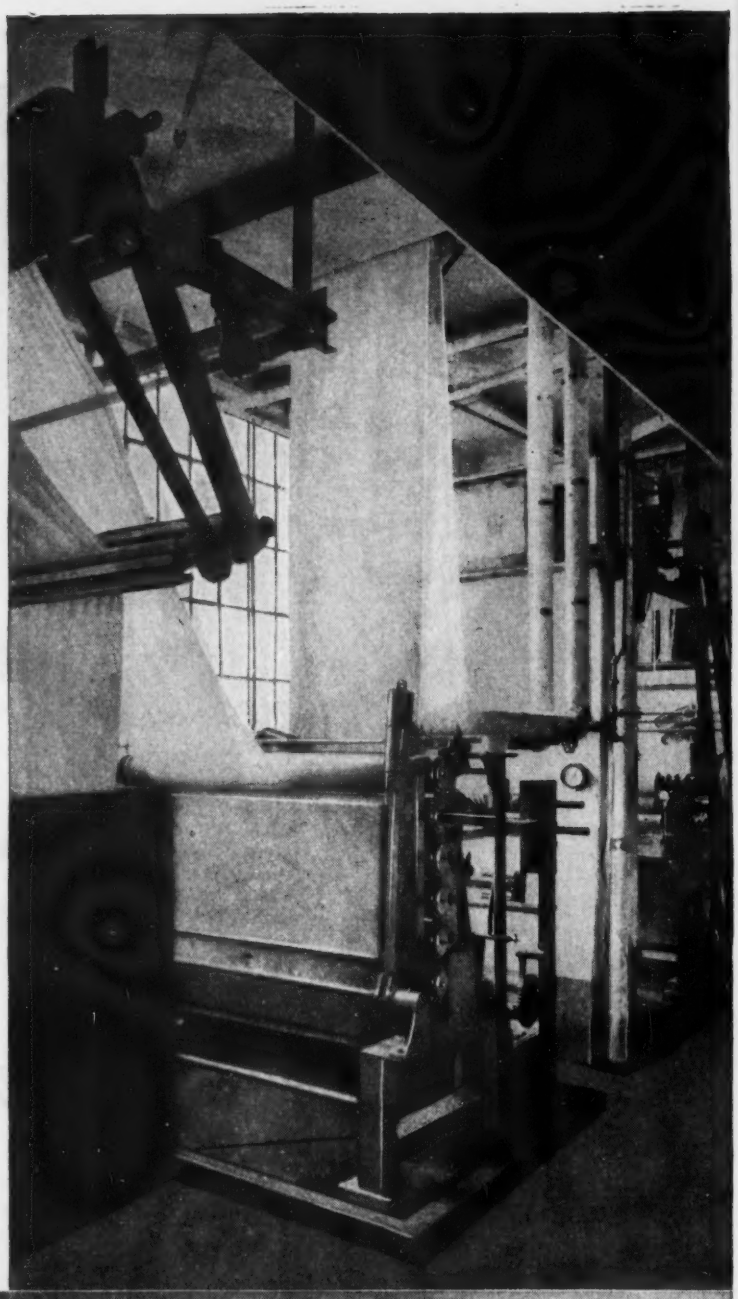
*LANASET is American Cyanamid Company's trade-mark covering its melamine resin for controlling wool shrinkage. The process under which it is applied is covered by United States Patent No. 2,329,622

● *Built by* H. W. BUTTERWORTH & SONS CO.

"JEWELS" FOR ROLLS *of Washers*

A bearing is as important to this economical, floor space-and-water saving 6-Roll Washer as a jewel is to a watch. Literally, SKF's are "jewels" to the rubber-covered top and bottom rolls, which are 14″ in diameter x 50″ face, and to the four intermediate rolls which are 8″ in diameter. Always there's the smooth, continuous performance, freedom from attention, cleanliness and self-aligning characteristics that have made SKF's so well known in the textile industry. On washers, dryers, Sanforizers, spinning and twisting frames and other textile machines, SKF puts the right bearing in the right place. 5715

SKF INDUSTRIES, INC., PHILA. 34, PA.



SPECIFY
SKF
BEARINGS

Fit for a Queen . . . The flawless elegance of clear, even-textured full-fashioned stockings makes them fit for a queen. Every full-fashioned stocking manufacturer knows that—regardless of the fibre used—only the best of needles will produce this perfect fabric. Keep your knitting machines young and effective with TMW Needles. . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

THE WAR DECORATIONS OF TEXTILE MACHINE WORKS

Bur. of Ord. Flag and Navy "E"
July 25, 1941

One Star All-Navy "E" Burgee
January 25, 1942

Two Star Army-Navy "E"
July 25, 1942

Three Star Army-Navy "E"
January 25, 1943

Four Star Army-Navy "E"
January 11, 1944

"Care, and not fine stables, makes a fine horse."

DANISH PROVERB

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot as yet* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

A Lucky Accident is no Substitute for Scientific Study

They happen once in a while, these accidental "discoveries" that seem to solve some phase of a problem in machine development. But before the benefits of any accident can be safely worked into the design, *the accident itself must be studied and understood.* That's the only way it can be accurately assayed for any permanent value . . . to avoid false conclusions that may throw the whole design off balance.

Experience is the only accurate assayer of the occasional "lucky accident." And C & K's experience in the study of the loom, *as a complex of interrelated functions and parts,* has long since passed the point where any such accidents need be depended upon. The more knowledge is gained, the less chance there is for accidental discovery. For in most cases, improvements are *not* accidents . . . *they're the results of plain, hard, brain-cudgelling work!*

Now, how are these improvements tested? Against this set of six questions:

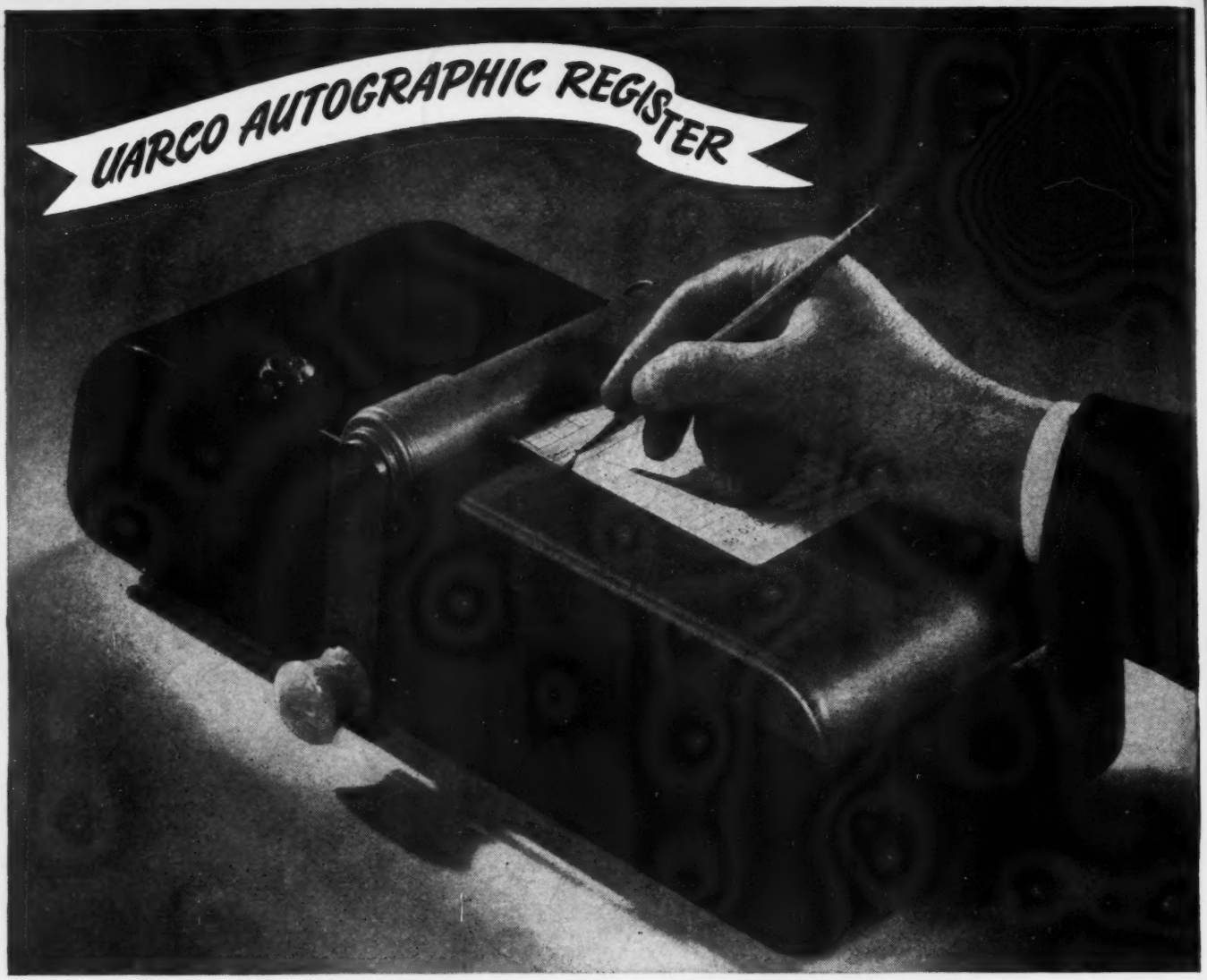
1. Does it increase *Speed of Operation?*
2. Does it improve *Continuity of Operation?*
3. Does it decrease *the Work of the Operator?*
4. Does it decrease *Cost of Maintenance?*
5. Does it improve *Quality of Fabric?*
6. Does it improve *Appearance or Utility?*

When the answer to at least one of these questions is definitely "yes", then there's an indication that there may be a new improvement that's a sound contribution to *your* weave-room efficiency. *And that's no accident!*

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.

between Today's War Weapons . . .
and their New Uses in Tomorrow's Looms



Mechanical "Efficiency Expert" To Keep Better Business Records

Efficient records mean a smoother flow of work throughout your organization. And that's what Uarco Autographic Registers bring to business . . . bring convenience, accuracy and speed to the tedious job of keeping business records.

There are no time-wasting getting-ready-to-write operations with a Uarco Autographic Register on hand. Carbon paper and forms sufficient for a full day's use, or more, are loaded in the Register . . . then you're all set for fast, easy writing. And at a single writing, as many as six copies can be produced.

Uarco Autographic Registers put an end to guesswork, lessen the possibility of errors. The firm writing base . . . the ever-fresh roll of carbon paper give assurance of clear, concise records. Some models of Uarco Registers—the one illustrated above, for instance—automatically file a duplicate of every record written . . . eliminating lost tickets, forgotten charges and like errors.

Uarco Autographic Registers are now being used successfully in every branch of business . . . wherever records are kept. There is a Uarco Register for your record-keeping need. For the complete story call a Uarco representative today . . . or write.

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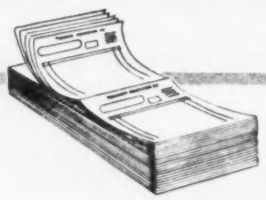
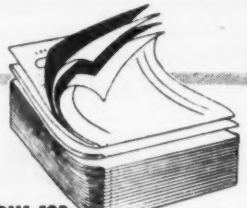


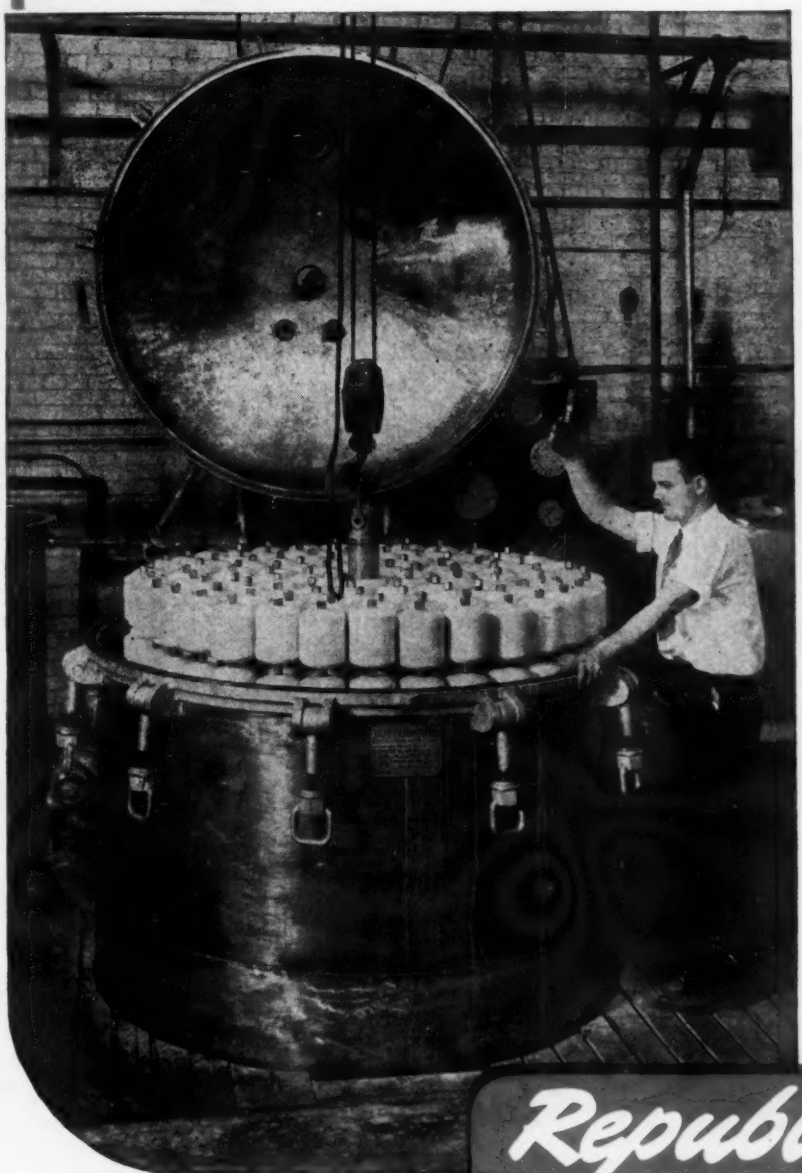

CONTINUOUS-STRIP FORMS FOR HANDWRITTEN • TYPEWRITTEN • BUSINESS MACHINE RECORDS

UARCO

BETTER · BUSINESS RECORDS

AGE MEANS LITTLE TO EQUIPMENT OF

Republic ENDURO



—but it means much to users of dyeing, bleaching and other equipment made of ENDURO Stainless Steel. Textile equipment of ENDURO installed more than ten years ago and in continuous service since then is just as serviceable today as when new.

That means money saved—saved through lowered maintenance and replacement costs—to say nothing of what may have been saved through increased output.

Republic ENDURO has the strength and toughness of steel. It is unaffected by dyeing, bleaching and other textile processing solutions. It resists rust and corrosion. It is clean and remarkably easy to keep clean. A simple flushing with water followed by wiping usually will suffice between batches—even between dark and light colors. And ENDURO does not alter colors—assures true shades.

It's time to start thinking of the postwar equipment you will buy—and it's time to start thinking about the advantages ENDURO can bring you. Ask your equipment manufacturer or write us for the full story.

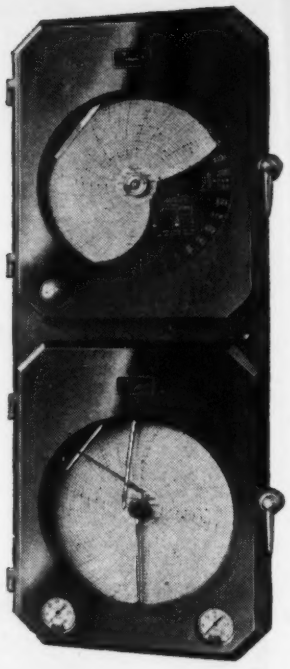
REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N.Y.

Republic
ENDURO STAINLESS STEEL

Other Republic Products include Carbon and Alloy Steels—Pipe, Sheets, Strip, Plates, Bars, Wire, Pig Iron, Bolts and Nuts, Tubing

HEY YOU!

IT'S TIME TO MAKE SAMPLINGS!



PRETTY soft for the operator of a package-dye setup like this. All he has to do is load up and push the button—and wait for the blow of a horn or the flash of a signal light to "give him a yell" when samplings are to be made!

That's the Taylor Co-ordinated Temperature Control System, shown below on a four year old installation of Venango Package Dye Machines. The new model Taylor Fulscope Time Schedule Controller above is even more versatile. This instrument is also in use on control systems for piece dyeing and yarn dyeing machines, the latter with automatic flow reversal. Automatic-to-manual feature permits manual control of flow direction when desired.

A control system like this speeds up the whole dyeing operation. It helps you match shades or repeat colors with a minimum of additions. Savings in steam and dyestuffs are substantial. How about talking it over with us? Taylor Instrument Companies, Rochester, N.Y., and Toronto, Canada. *Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow and liquid level.*

BUY ANOTHER WAR BOND TODAY!

ARMY NAVY

Taylor Instruments

MEAN

ACCURACY FIRST

IN HOME AND INDUSTRY

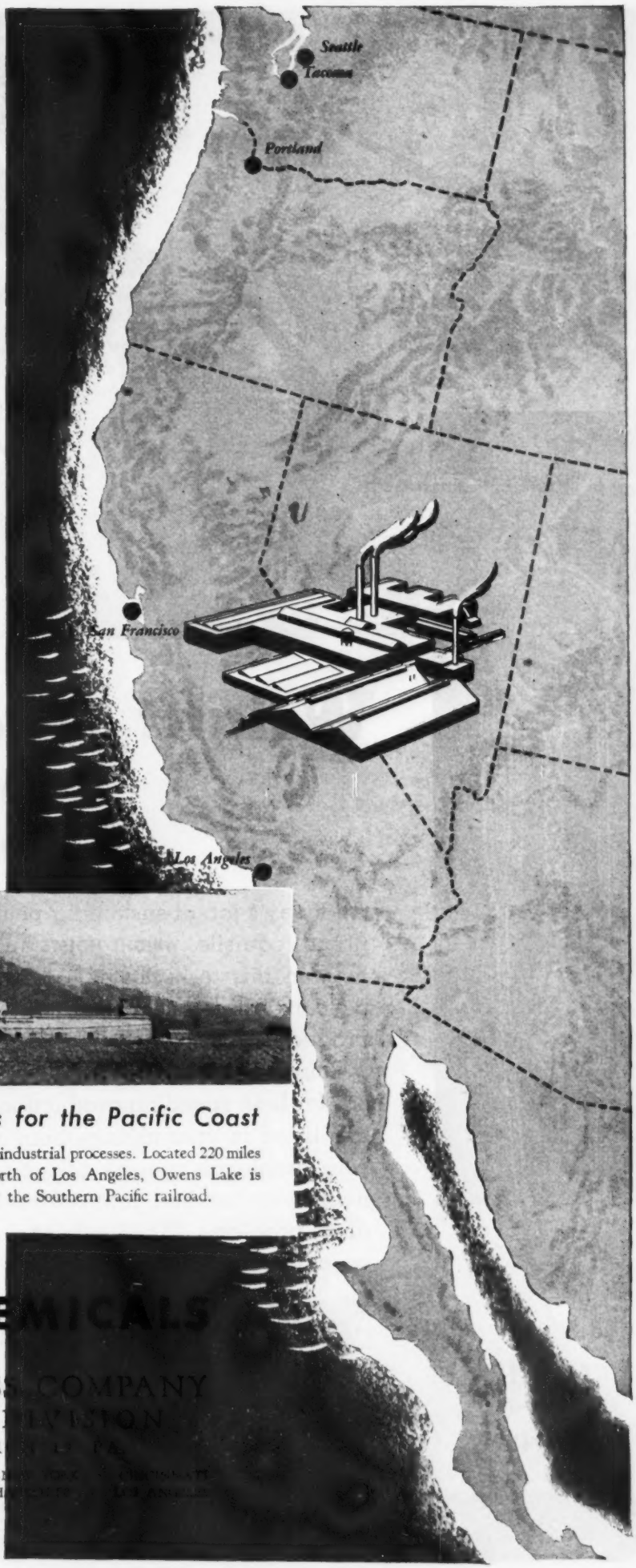
COLUMBIA makes another contribution to national industrial progress . . .

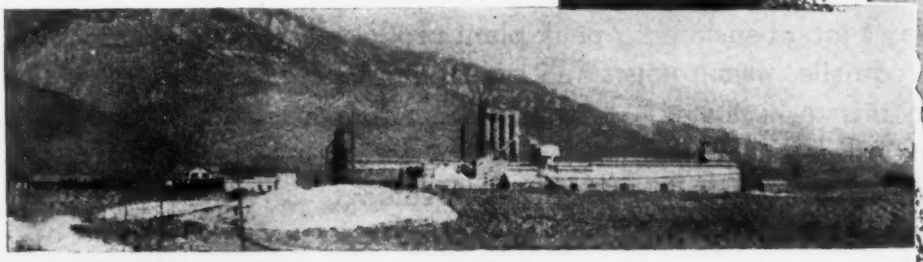
Pacific Coast Production

The entire nation looks ahead to the continued expansion of Pacific Coast industry, so necessary to America's future. Columbia is proud to join with the hundreds of industries which will help to add this important chapter to American industrial history.

As announced recently, the Pacific Alkali Company has become a Columbia division. Pacific's rich alkali deposits provide the source of an abundance of essential industrial chemicals. And the production and distribution facilities of Columbia combine to guarantee that these needs of industry, up and down the Pacific Coast, will be efficiently and economically served.

This expansion of Columbia facilities is another example of its progressive policy which seeks not only to serve the immediate needs of its customers throughout the nation, but to anticipate them to as great an extent as possible.





OWENS LAKE, *Rich Source of Alkalies for the Pacific Coast*

Owens Lake is a natural deposit of alkalies consisting principally of Soda Ash, Borax and Sesqui-Carbonates . . . chemicals essential in numerous industrial processes. Located 220 miles to the north of Los Angeles, Owens Lake is served by the Southern Pacific railroad.

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY
COLUMBIA CHEMICAL DIVISION
GRANT BUILDING · PITTSBURGH, PA.

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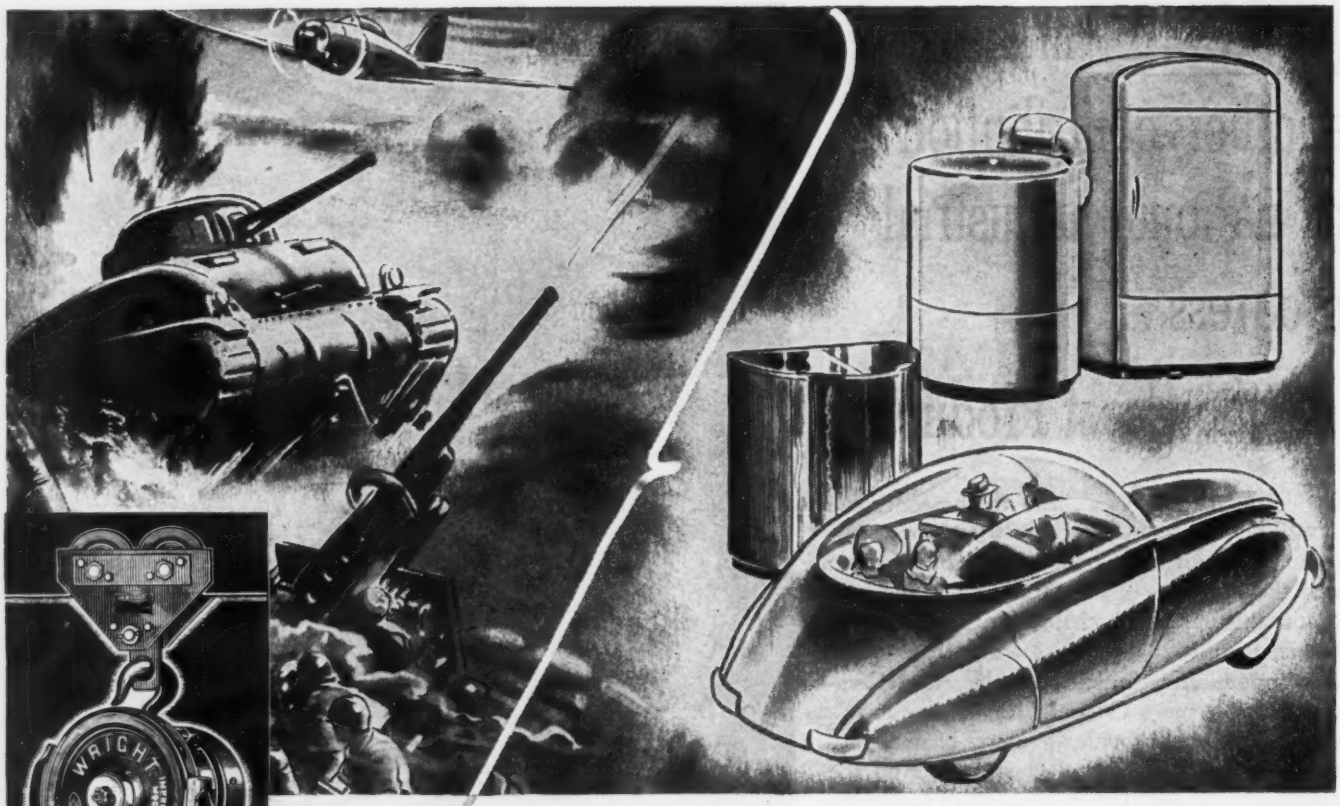
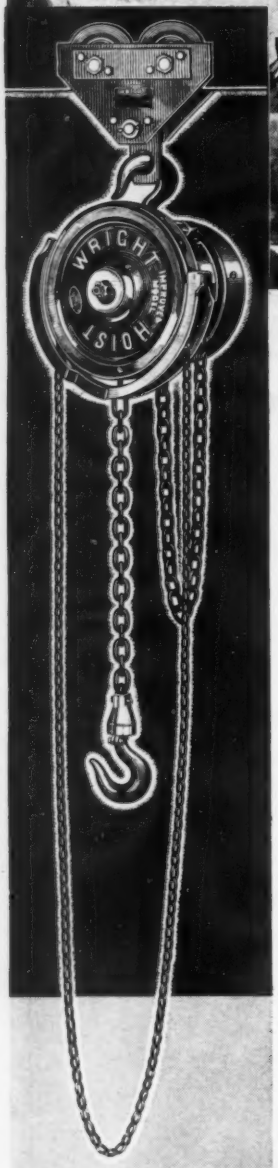




CAPACITY ¼ TO 40 TONS

Wright affords

• • • faster production,
• • • greater economy

In today's job of sustaining peak plant production, *speed* is the prime requisite. **WRIGHT HOISTS** and **CRANES** can be of immeasurable help in this task. Later, when you are again started on your peacetime pursuits, **WRIGHT HOISTS** and **CRANES** will help bring your production costs down to competitive levels.

Your local **WRIGHT** distributor is well-qualified to suggest methods for both speeding production and saving money. You will find him listed in your metropolitan classified telephone directory. If your problem is special, ask your distributor to call a **WRIGHT** engineer, who has had years of experience in solving material-handling problems. Write today for a free copy of **WRIGHT'S** price and specification bulletin.

ARMY E NAVY
FLYING OVER THE WRIGHT HOIST PLANT

WRIGHT MANUFACTURING DIVISION
York, Pa., Chicago, Denver, Los Angeles, San Francisco, Portland, New York

WRIGHT *Improved High Speed* **HOISTS**

ACCO

In Business for Your Safety

AMERICAN CHAIN & CABLE • BRIDGEPORT

STAINLESS STEEL SHEETS

Prompt Service for the TEXTILE INDUSTRY

All types and formulae. Consult our Technical Service for your Specifications requirements.

ROLLING STAINLESS STEEL EXCLUSIVELY

EASTERN STAINLESS STEEL CORP.

BALTIMORE 3, MARYLAND, U. S. A.

If you are looking for ways to get faster, lower-cost production, consider ARMCO Stainless Steels when you plan your new-equipment budget.

Stainless textile equipment is doing a bang-up wartime job now. This 9-cylinder cotton slasher, for example, has been going full blast on war-work. But just as important, it will be ready to swing right back into production of civilian goods.

The cylinders and the size box will stay in service indefinitely because the metal is solid stainless steel. There is no plating to wear off and cause expensive replacements. Moreover, the smooth surface of this bright, rustless steel will not snag or stain fabrics.

Requires Little Care

In wet processing and other equipment, stainless requires little care. It is easy to keep clean. Only a hot water rinse is needed to wash out lint, dye and other deposits. And you can change colors quickly without worrying about dye carry-over. No time is wasted on "boil-outs."

When you make plans for new and better equipment, keep ARMCO Stainless Steel in mind. Write for a copy of the folder, "Your Stainless Steel Equipment . . . Its Advantages and Care in Textile Processing." The American Rolling Mill Company, 151 Curtis Street, Middletown, Ohio.

STAINLESS ★ ARMCO ★ STEEL

THE AMERICAN ROLLING MILL COMPANY

PUT IN A HUSKIE...FASTER

NEW BEARINGS AND RODS SAVE OUTAGE, MAN-HOURS, MAINTENANCE
A new Worthington line of bearings and connecting rods, now save the continual juggling required by less efficient wedge-adjustable construction. Write for complete details.

New Worthington YC "packaged" unit meets 4 requirements of modern compressor design

No erecting engineer, no special foundations are required when you install this Huskie. It comes packaged for quick installation.

Two-fisted "Y" design gives you these four big advantages:

1. ***Higher Speeds.*** Vertical Y-frame for perfect balance and higher r.p.m. Rugged construction, for continuous high speed operation.

2. ***Ease of Installation.*** 75% less foundation space than horizontals of the same capacity. Quick, safe installation — even where subsoil is poor—without special clamps or engineering service.

3. ***Accessibility of parts.*** Quicker, easier periodic inspections. Large handy openings. Valves outside, for accessibility. Full-floating metallic packing easily reached.

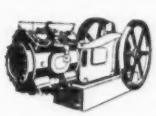
4. ***Adaptability to many drives.*** Flanged type, synchronous or induction motors, directly mounted on compressor shaft. Easily arranged for Multi-V-Drive or for coupled drive from explosion-proof motor or practically any type of rotative power.

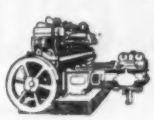
Write for free Bulletin L–667–B1. *Worthington Pump and Machinery Corporation, Harrison, New Jersey.*

WORTHINGTON *BEHIND THE NAME*

NO OTHER COMPRESSOR WILL OUTPERFORM A WORTHINGTON

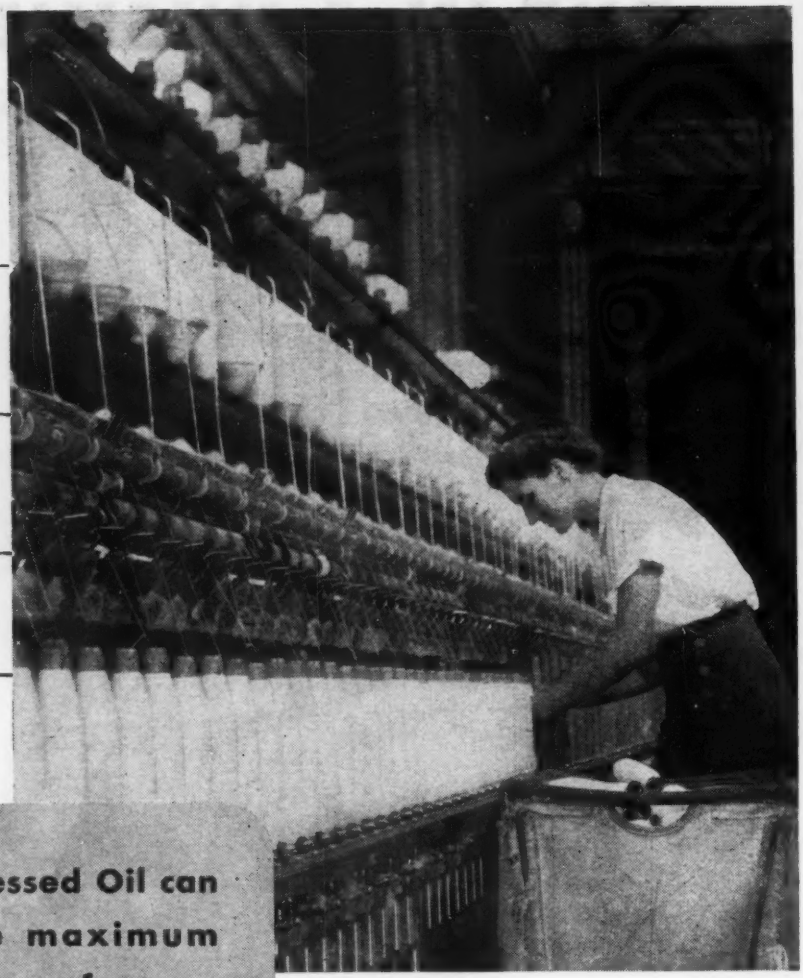
Y-types *Horizontal* *Vertical* *Radial* *Portable* *Gas Engine Compressors*





Gulfgem Oil

provides better lubrication for spindles



This Alchlor-Processed Oil can help you insure maximum poundage from your frames

BETTER spindle lubrication means less wear, fewer bolster renewals, and reduced end breakage! That is why hundreds of leading mills specify Gulfgem Oil for spindles—they know from experience that this Alchlor-Processed Oil helps keep poundage up and maintenance costs down.

Superrefining by the Alchlor Process puts Gulfgem Oil in a class by itself as a spindle lubricant—gives it the superior lubricating value and long life that insures minimum down time for spinning frames.

It will pay every mill to learn the full protective maintenance possibilities of this highest quality spindle lubricant. Ask the Gulf Service Engineer in your vicinity to give you details.

Gulfgem Oil—and the more than 400 other quality lubricants in the Gulf line—are available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write, wire, or phone your nearest Gulf office today.

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

It will pay you to investigate—call in a Gulf Lubrication Service Engineer

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GULF OIL CORPORATION · GULF REFINING COMPANY

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There are practically no limits to the versatility of our fabric coating facilities.

Today our plants are turning out millions of yards of heavy duty fabrics, uniformly proofed against water and many other fabric destroying elements.

Tomorrow's production may be yards of soft, non-allergic cottons for sanitary sheetings or baby clothes —or thousands of yards of tough, swanky simulated leather upholsteries—or simply waterproofing, with clear filmy plastics, dainty curtain materials for a lady's shower.

You as a manufacturer may or may not be interested in these particular end uses—yet they are but a few of the future applications for plastic coated fabrics in consumer goods and industry.

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Plastic coatings are here to stay. For hundreds of applications they have been found superior to the protective materials for which they were substituted after Pearl Harbor.

If your future manufacturing plans call for fabrics or paper "proofed" against such destructive elements as acids, alkalies, oils, gases, water and many others we would welcome the opportunity of supplying your requirements.

Samples of our current production of plastic coated fabrics and papers are available for your inspection.

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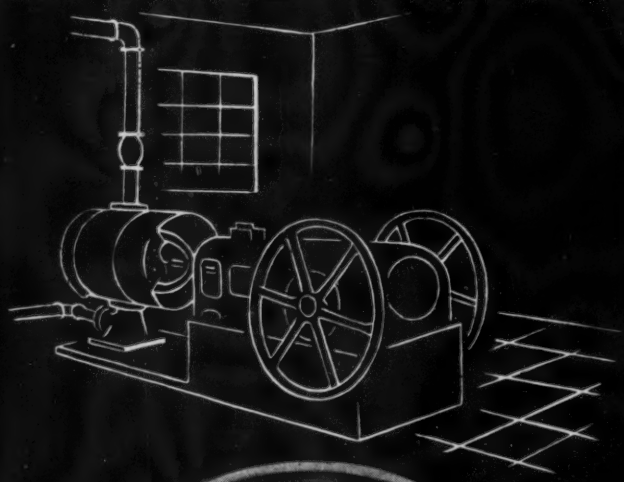

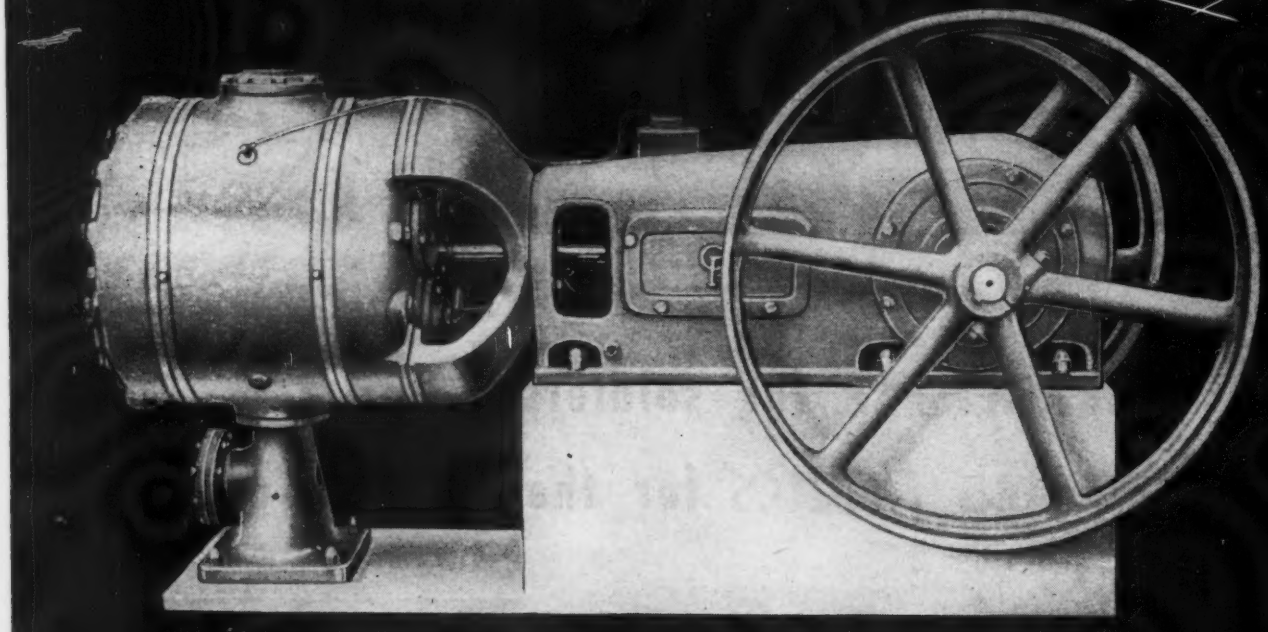

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ONE of the discharge assemblies in each end of the cylinder of a CP Horizontal Vacuum Pump is arranged as a special automatic valve. Should a slug of liquid be accidentally drawn into the cylinder the relief valve assembly will lift off its seat against a heavy spring, providing extra escape area for the liquid and minimizing the danger of damage to the pump. This is an exclusive CP feature.

The durable Simplate Valves are located in both cylinder heads parallel to the piston face, affording low valve clearance and high volumetric efficiency at high vacua.

Arranged for belt, motor or steam drive, CP Horizontal Single and Duplex Dry Vacuum Pumps are available in capacities up to 15,000 c.f.m. Two-stage pumps available for very high vacua. Write for complete information.

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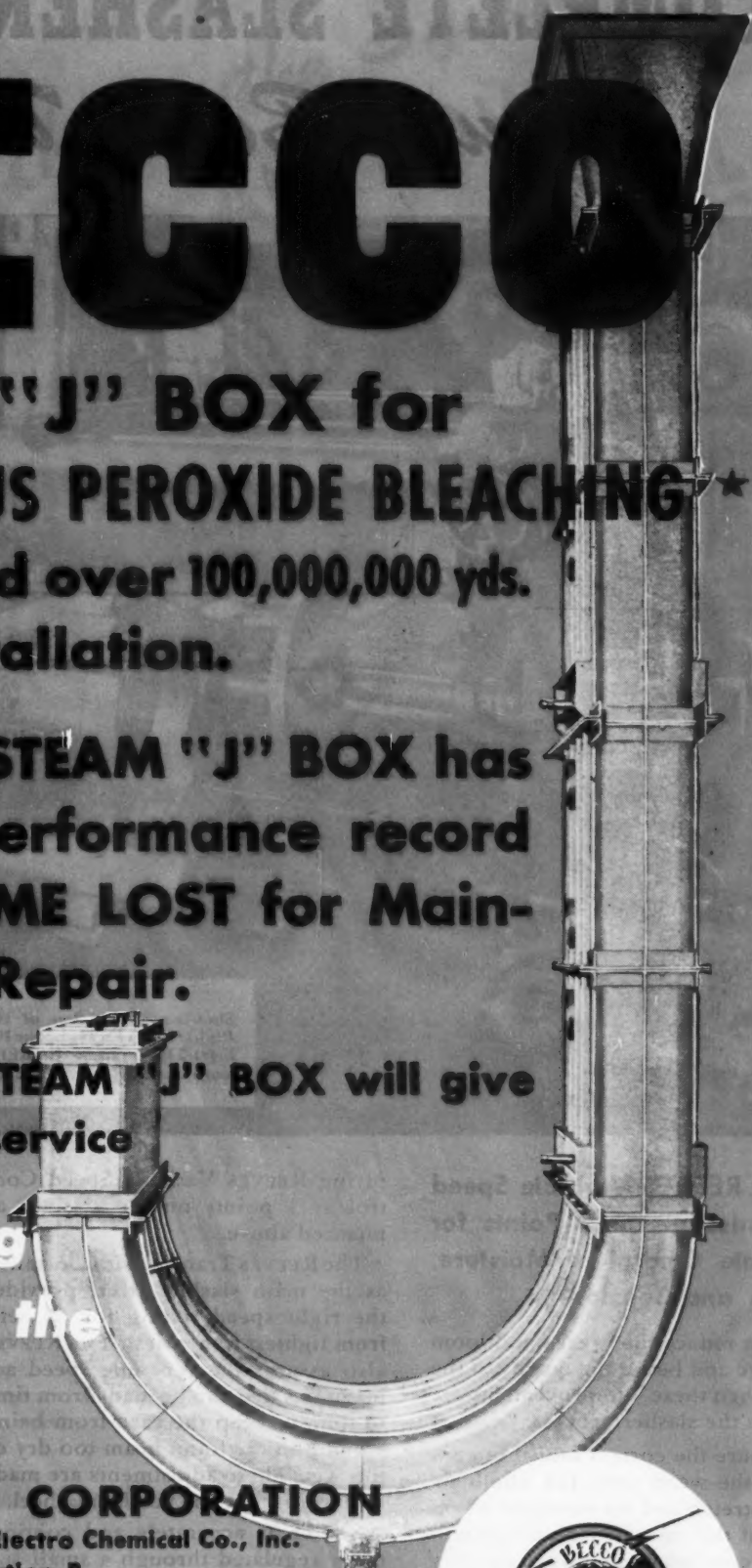
STEAM "J" BOX for CONTINUOUS PEROXIDE BLEACHING ★

has bleached over 100,000,000 yds. since its installation.

This BECCO STEAM "J" BOX has a perfect performance record with NO TIME LOST for Maintenance or Repair.

Every BECCO STEAM "J" BOX will give you the same service

"Nothing Moves but the Cloth"



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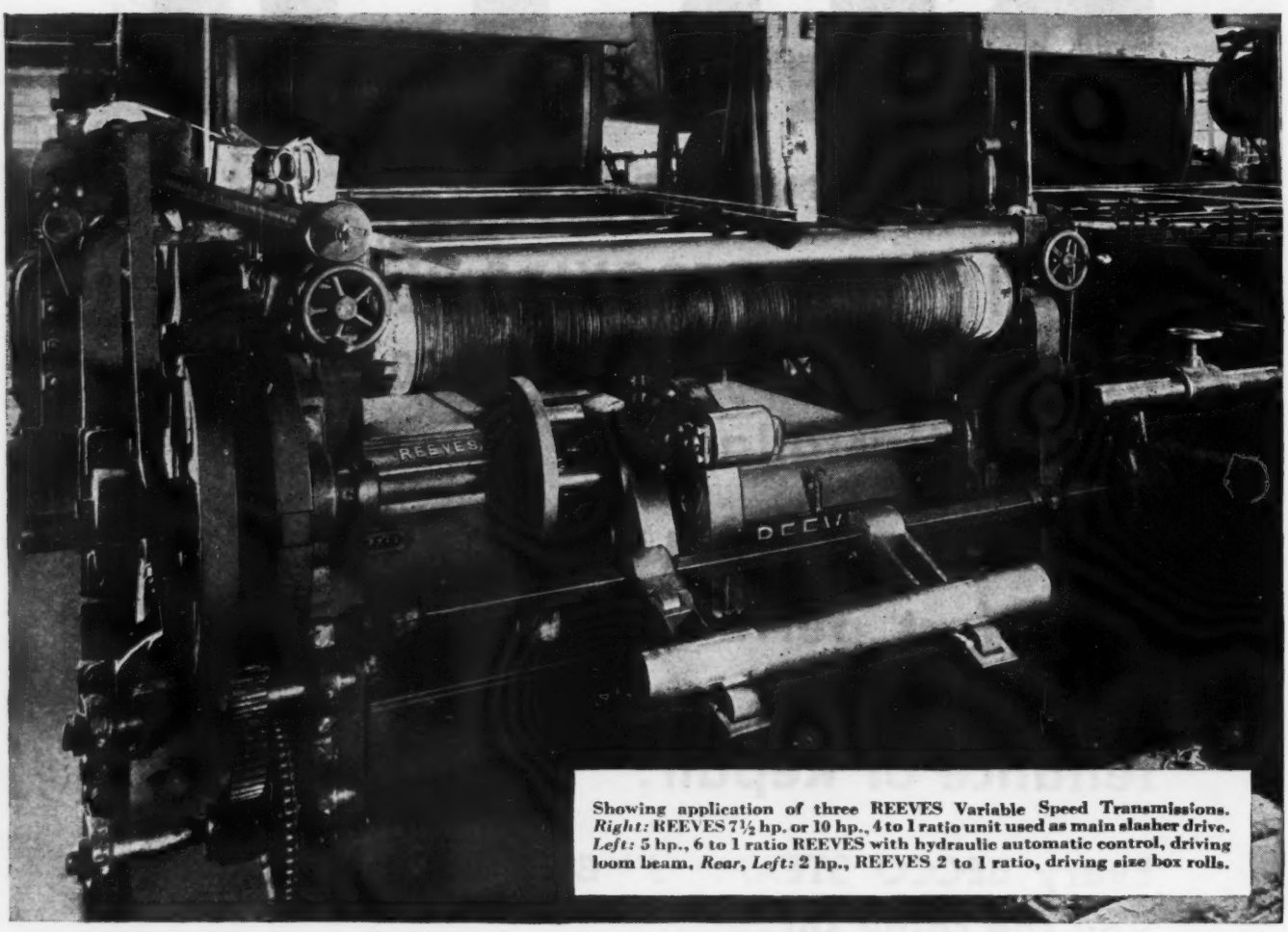
COMPLETE SLASHER CONTROL

Insures Better Weaving



Showing application of three REEVES Variable Speed Transmissions. *Right:* REEVES 7½ hp. or 10 hp., 4 to 1 ratio unit used as main slasher drive. *Left:* 5 hp., 6 to 1 ratio REEVES with hydraulic automatic control, driving loom beam, *Rear, Left:* 2 hp., REEVES 2 to 1 ratio, driving size box rolls.

Apply REEVES Variable Speed Transmissions at 3 Points for Accurate Control of Moisture, Stretch and Tension

You can reduce the breaks and loom stoppage and better the quality of the cloth when these 3 improvements are made in the slasher process:

(1) Assure the correct moisture content of the warp yarn. (2) Eliminate undue stretch and the resultant weakening of the yarn. (3) Maintain uniform pre-set tension between delivery roll and loom beam throughout the building of a beam to retain the elasticity in the yarn and make a beam of desired density.

All this can be accomplished by applying REEVES Variable Speed Control at 3 points on the slasher, as pictured above.

The REEVES Transmission, installed as the main slasher drive, provides the right speed setting for all sets, from lightest to heaviest. The REEVES also assures the very fine speed adjustments that can be made from time to time to keep the yarn from being wound on the loom beam too dry or too wet. These adjustments are made by turning the REEVES handwheel.

Stretch is accurately and continuously regulated through a small size vertical, enclosed REEVES Transmission driving the size box rolls. By turning the REEVES handwheel, the r.p.m. of the size box rolls is adjusted perfectly to give precisely the desired tension and stretch of the yarn.

The REEVES Transmission, with piston-type hydraulic control, applied to the loom beam, automatically reduces the r.p.m. of the loom beam and maintains constant y.p.m. surface speed as it increases in diameter. It holds constant tension on yarn and makes a beam of uniform density throughout. The control may be set for tension desired on sets to be run; then remain same until reset.

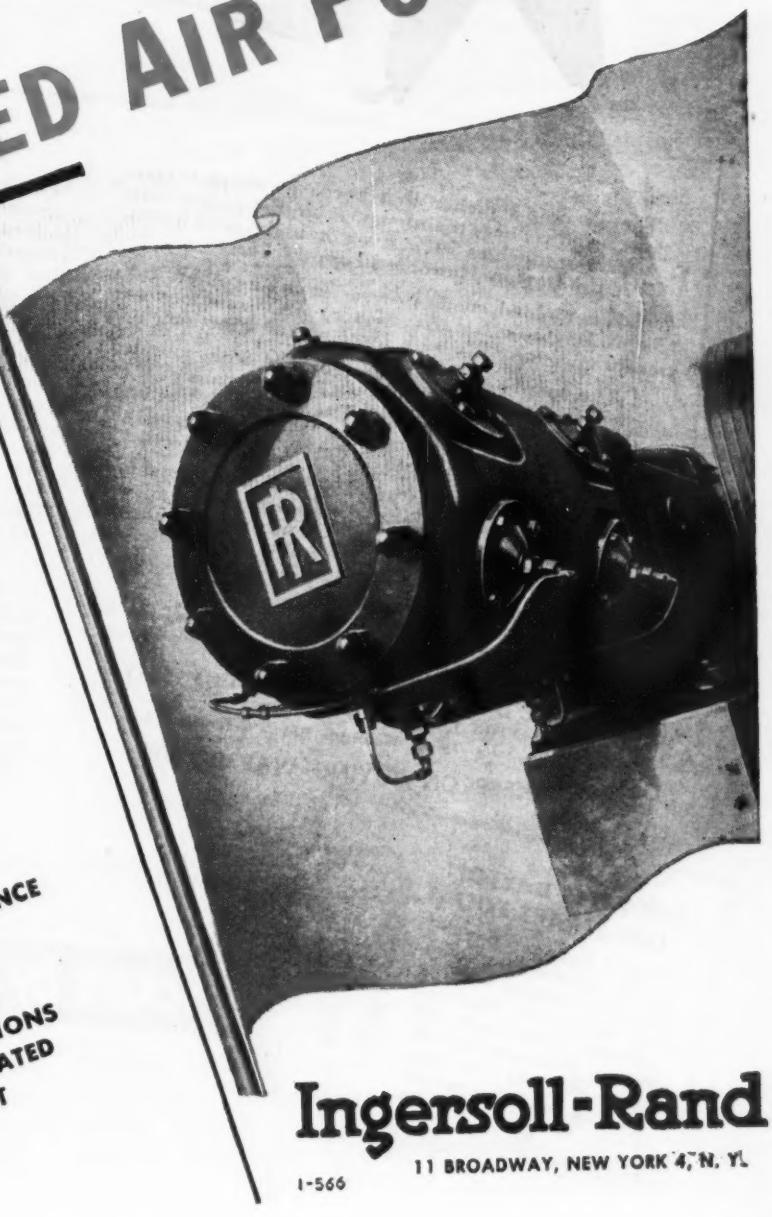
Yarn stretch in the slasher has been reduced to less than 1% when equipped with these 3 REEVES drives. Write us about an application in your plant. Ask for Bulletin W-446. Our seasoned engineers are at your service.

REEVES PULLEY COMPANY
COLUMBUS, INDIANA

REEVES SPEED CONTROL

This is the Symbol
FOR AIR POWER
OUT OF CONTROL!

IR IS THE SYMBOL FOR
CONTROLLED AIR POWER



HUMIDIFICATION

Overseers will tell you that the most important use of compressed air in textile mills is for controlling cranky fibers and static with humidification. I-R compressors have furnished the air for humidification since the system was first developed and Ingersoll-Rand Company is ready for the increased demand that post-war plans call for.

And don't overlook the many other time-saving and labor-aiding uses of controlled air power, such as:

CLEANING TEXTILE MACHINERY AND MOTORS

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SPRAY PAINTING

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CONTROLLING MACHINE OPERATIONS WITH AIR-OPERATED EQUIPMENT

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Molded Loop Pickers Cut Picker Costs 50%

There's now a picker that keeps its shape, "stays put," and reduces maintenance, so that picker costs are cut as much as 50%. Even on high speed looms. It is the Dayton Thorobred Loop Picker.

It is molded, made twice as strong as others (except Dayton's DeLuxe Picker) and combines exceptional long-life with ideal picker function.

The loop holds. Its tapered hole with rounded corners fits tightly, and has no expansion; so Dayton's don't "work up." They maintain throughout *many months* of service the correct position for perfect shuttle throw.

The face-block has precisely the proper cushion, resilience, and durability; is anchored in, and vulcanized to stay. It can't buckle or distort. And, the face is flared, and shaped to guide the shuttle into the body of the picker. Shuttles get ideal throw, without burning, without "bounce."

So read *all* the advantages that thousands are getting today with Dayton Thorobred Loop Pickers.

THE DAYTON RUBBER MFG. COMPANY
DAYTON 1, OHIO WAYNESVILLE, N. C.
Main Sales Office: Woodside Bldg., Greenville, S. C.

KEEP ON BUYING WAR BONDS

MOLDING ELIMINATES ROUGHNESS

After exhaustive tests, a finer fabric 2½ times stronger than other materials was found. Under laboratory control, this fabric is molded smoothly, and shaped with rounded corners that permit weaving of the finest filaments without trouble.

UNIQUE DESIGN INSURES LONGER SERVICE

The Dayton has a forward tilt that *keeps* it aligned to give only horizontal blows. It withstands beatings. Replacements, if any, are rare.

EASIER, FASTER TO INSTALL

The tapered hole guides installation. They're absolutely uniform. And, made without rivets, Daytons have no "lefts" and "rights." Fewer are needed in stock.

BETTER PRODUCTION AND GREATER OPERATING ECONOMY ASSURED

Looms can be boxed the same at all times. Jerked-in fillings are reduced to a minimum. You, too, will save at least 50% of your picker expense, with Dayton Thorobred Loop Pickers. Get *all* the advantages of Daytons years of specialized experience in making many accessories, all technically more excellent, for the Textile Industry. Write for complete information, plan for a trial installation, today.

TRY THESE DAYTON LUG STRAPS TOO

They're stronger beyond every requirement, with excellent cushion to protect other parts. Their resilience is technically accurate. They need no adjustment. They're very durable, and low priced.

Pickers by Dayton Rubber

REG. TRADE MARK THE DAYTON RUBBER MFG. CO.

The Mark of Technical Excellence in Synthetic Rubber

WHAT DOES AMERICA WANT?

IT IS THE PURPOSE of this editorial, the thirty-first of a series, to state the urgent need for a clear declaration of American policy in world affairs.

Within the past few weeks there has been a wakening conviction in this country that the determination of international arrangements cannot safely be put aside until victory has been won. For we have seen actions taken in Europe seemingly without full consultation and agreement of the Allied powers, which may profoundly affect the design of the post-war world.

A declaration of American policy is needed, and it should be accompanied by a statement of our firm intention to exert full effort to procure its acceptance and furtherance. Emphatically, this does not mean that an American platform should be put forth as an ultimatum, which other nations must accept totally, or reject at the cost of having the United States withdraw from collaborative participation in world agreements and organization. On the contrary, the first plank in such an American platform should be a firm commitment on our part to participate with our associate nations in building a general system of world security and order. By definition, this requires that each participant be willing to accommodate its purely national interests to a program that can be accepted as fairly representing the interests of all. But equally, there is imposed on each participant an obligation to state honestly and openly what it conceives its individual interest to be, as well as its concept of what measures will best serve the general interest.

☆ ☆ ☆

Americans have displayed a singular diffidence in the matter of formulating a bill of American objectives — singular, in that it contrasts so sharply with our power to exercise as broad a leadership as we are able to define. This reluctance stems partly from the inherent difficulty of arriving at a coherent statement of national aims in a country like the United States — so vast in area, so multiple in its sectional and group interests, and so soundly committed to the free expression of individual thought. But it stems also, in part, from a tradition of national isolation which, however understandable in historic perspective, now stands clearly discredited by two world wars which were not of our making, but from which we were unable to hold aloof.

That the economic wellbeing and political security of the rest of the world is closely bound to the decision and performance of the United States is questioned nowhere but in America. Political boundaries and restrictions cannot build effective fences against the interplay of economic forces, and the sheer weight of American economic influence is of crucial import to all the other nations of this globe. In large measure their decisions will be shaped either in response to the opportunities that our procedures offer them, or in defense of interests that our procedures may jeopardize.

☆ ☆ ☆

The United States contains only about 6 percent of the world's population. But — our national income, before the war, amounted to almost 25 percent of world income; our industrial output as a whole approximates 45 percent of world totals, and we now are producing a like percentage of the world's munitions; we have 35 percent of the world's railroad mileage; 25 percent of merchant fleet tonnage; 50 percent of the world's telephones; 45 percent of steel production; 40 percent of aluminum production; 33 percent of coal output; we are refining (though part of the production comes from imports) 55 percent of the world's copper, and 70 percent of its petroleum; we now are producing 50 percent of the world's rubber (though post-war resumption of natural rubber production will sharply reduce this balance); our shares of agricultural production are, of course, much smaller, but just before the war we accounted for 35 percent of world cotton production, 15 percent of wheat, and 10 percent of wool.

Whether we like it or not, we must exercise political responsibilities commensurate with the weight of our economic power in an inter-dependent world. But before responsibilities can be assumed, they must be defined. Can the United States arrive at a clear agreement and statement of aims for which it is willing to stand sponsor?

The recent campaigns of both political parties have helped to provide an encouraging answer. In general, election mandates are glaringly deficient as indicators of a unified national purpose. A majority of voters declare themselves for the winning candidate. But even among the majority there are varying degrees of enthusiasm for the platform principles espoused by their candidate; and the substantial minorities of the defeated parties may have had no enthusiasm whatsoever for particular planks in the winning platform, or for the platform in its entirety. A sportsmanlike deference to the will of the majority is a feeble substitute for unified national conviction.

But this Presidential campaign was noteworthy for certain basic principles upon which both the platforms and the candidates of the major political parties were

united. Surely, upon such areas of agreement there may be said to have been an American mandate; the more so, because upon certain of them, we have evidence that no party or candidate could have declared opposition with any hope of victory. What then were these agreed-upon principles? The following is an attempt at a fair summary:

1. That America, in collaboration with its Allies, is committed to seeing the war through to the unconditional surrender of our declared enemies.

2. That America is committed to a responsible role in a world security system after the war, including a commitment to lend the support of our armed forces to repel aggressions that may violate such security.

3. That America is committed to the post-war goal of substantially maintaining in this country an economy that will provide jobs for those who are able and willing to work.

4. That America is committed to the principle of achieving this goal of sustained, high-level employment of manpower and economic resources under a system primarily activated by competitive enterprise.

These are American mandates. They can be made the nucleus of a coherent national policy, for they define aims upon which the great majority of our people are emphatically agreed. But no one can pretend that in this generalized form they serve as more than directional guides for either internal legislation or international negotiation. This skeleton of aims must be clothed with the living flesh of agreed-upon means. Here we have no national mandates of comparable clarity, but it is patently clear that it is our compelling task to achieve them.

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On our elected representatives in government rests the primary responsibility for formulating the specific programs required to implement national policies. Under our system of government, those representatives need continuous nourishment in the form of mandates as to what the people want. Particularly during a period when so many urgent problems are being thrashed out upon an international basis, this imposes a grave responsibility upon all sectors of our citizens; for it requires them to think in terms of the welfare of our nation as a whole, to focus upon those points which offer possibilities for substantial agreement among Americans, rather than upon matters of individual, group, or sectional advantage.

In earlier editorials I have tried to define a basis for national policy in keeping with that broad purpose. They have dealt with problems that are basic to the healthy functioning of free enterprise under the competitive system, with the mobilization of our resources for war and for reconversion to peace-time production, with labor and management responsibilities and relations, with national debt and taxation, with foreign trade and our economic relationships abroad, with the industrial development of backward areas. Since they have been presented in the McGraw-Hill publications, which reach a group broadly representative of all American industry, they have centered upon problems that have an economic rather than a strictly political import.

Future editorials, to appear during 1945, will deal with comparable subjects selected in recognition of the urgent importance for arriving at concerted definitions of national policy. I am fully aware that no individual or group can speak authoritatively for the American Nation. But I hope that an honest attempt to formulate sound concepts of national interest in crucial economic matters will help to crystallize American policy both by focusing agreement and by eliciting dissent.

☆ ☆ ☆

Here there is space only to indicate in broadest outline what I conceive to be desirable foundations for an economic policy for the United States:

1. The attainment of a high and sustained level of business activity and employment in the United States and in the world.

2. Active and expanding markets for world trade based upon fair competition rather than upon bloc agreements, discriminatory preferences, and cartel arrangements.

3. The encouragement of industrial development in nations that have been backward in that respect.

4. A recognition that hospitality to imports, rather than constituting a threat to national standards of living, offers in fact the most potent instrument for international bargaining that any nation can command.

5. A willingness to assume a responsible national role in international arrangements designed to provide such financial stability as may be needed to support mutually advantageous world exchange of goods and services.

We must see to it that the end of military warfare does not merely open the door to an era of economic warfare.

The fact is that America has no choice but to assume leadership in world affairs. For the weight of our influence will be felt by other nations no less whether our attitude be positive or negative. And the cost to us of any international obligation which we might undertake must in all fairness be weighed against the equally real cost to us of dealing with measures that others may take to protect themselves against the results of our non-participation.

We have tended in the past to approach international commitments timidly, fearful that we might be outwitted in a world battle of wits. And in so doing, we have too often ceded to others the initiative of suggestion, leaving to ourselves the thankless task of accepting or rejecting what they demand of us.

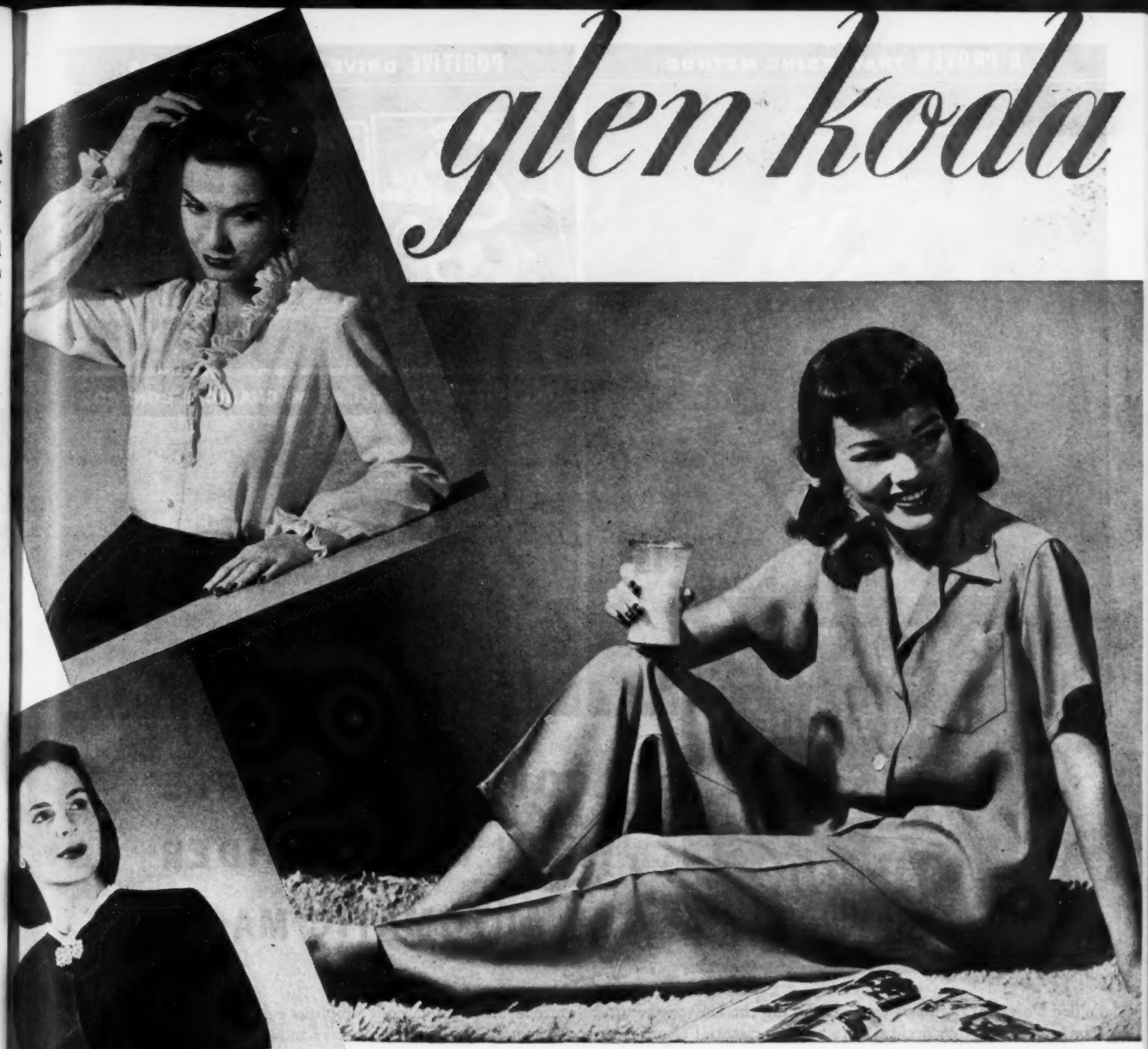
Our one bargaining weakness stems from the fact that other nations, by contrast feeble in potential power, know what they want and are able to mobilize all their strength to achieve it.

America can be the most effective nation on earth—if only it knows what it wants.

President McGraw-Hill Publishing Co., Inc.

THIS IS THE 31st OF A SERIES

glen koda



● Some fabrics *stay* in the limelight, year after year, season after season. GLEN KODA is one of these . . . a supple, firm-bodied, rep-type shantung of quality construction . . . woven with a warp of Koda, Eastman continuous filament acetate rayon, and a filling of spun viscose rayon. A versatile, widely featured fabric with a success record in dresses, blouses, pajamas, housecoats, junior wear.

Koda fabrics generally do become the classics of a manufacturer's line. They sell on appearance, hand and performance . . . tributes to an acetate rayon yarn of unvarying smoothness and uniformity. For information about Koda, consult A. M. Tenney Associates, Inc., 10 East 40th St., New York 16, N. Y., sales representatives for the Tennessee Eastman Corporation, subsidiary of the Eastman Kodak Company.

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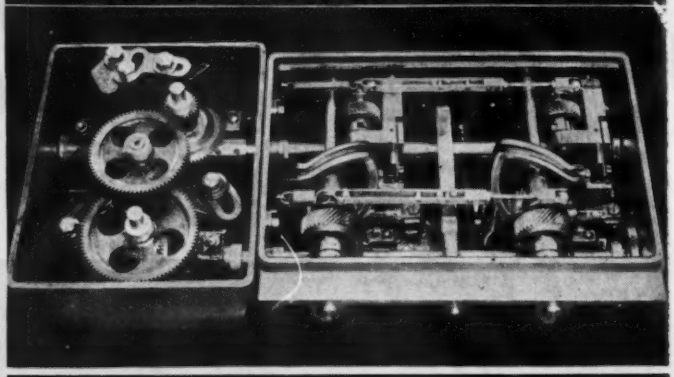
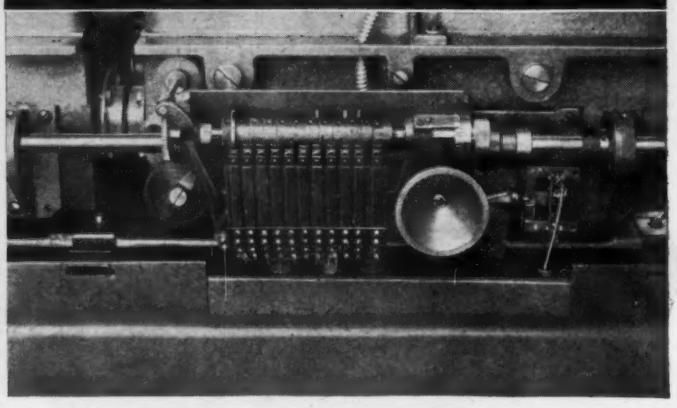
POSITIVE DRIVE, THROUGH GEARS



ELECTRICAL, AS WELL AS MECHANICAL CONTROLS



3 FEATURES

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BOBBIN WINDING

LOOK FOR ALL THREE WHEN YOU CONSIDER AN AUTOMATIC MACHINE

When Universal engineers were developing the Universal Automatic (No. 99), they decided to retain two essential elements of the No. 90 Machine — its positive drive and its yarn traversing method — and to use a combination of electrical and mechanical controls to make the machine automatic.

Alternatives were available — a driving agent other than gears, various unproved traversing devices, a wholly mechanical control system. As the result of their decision, mills operating the Universal Automatic have found that it gives . . .

MAXIMUM PRODUCTION. On the Universal Automatic, all spindles are gear-driven from a rotating shaft. With slip eliminated, there is no loss in speed between shaft and spindle.

LOWEST MAINTENANCE. Use of electrical controls for various machine functions simplifies design, eliminates friction, and reduces opportunity for wear and breakdown.

QUALITY WINDING. The unique Universal Traverse Wheel produces bobbins which are round, parallel-sided and free from ridges which cause plucks.

Other Important Universal Features. "Layer-lock" wind, reducing tendency to "shell off" in the shuttle. Centralizing bobbin driver. Automatic release of tension at start of winding. Magazine creeling. Single gear adjustment for changing number of winds. 9½" maximum traverse, 1½" maximum diameter. The UNIVERSAL AUTOMATIC has proved successful over a period of years winding rayon yarns for the loom. Orders for after-the-war delivery are now being accepted for winding all fibres.

UNIVERSAL AUTOMATIC

High Speed Bobbin Winding Machine

UNIVERSAL WINDING COMPANY

. . . Putting Electricity to Work to Improve Your Bobbin Winding

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23.4.16

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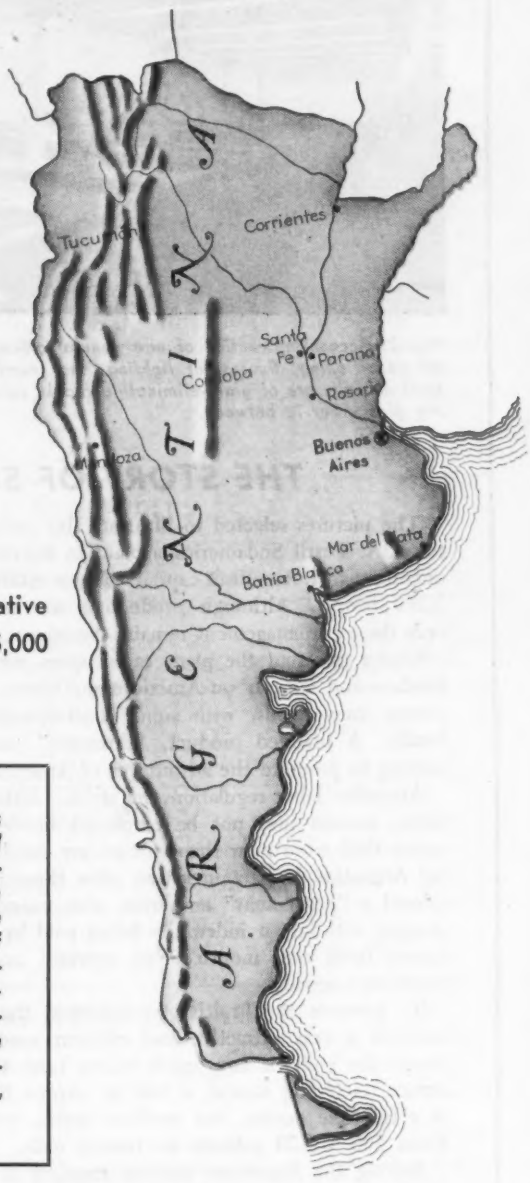
ARGENTINA HAS AN ACTIVE TEXTILE INDUSTRY

By MARION TALBOT MEADOWS, *Buenos Aires*



HIGHLIGHTS: P arily a cattle country, but wool is an important native fiber and raw cotton shows promise. Nearly 300,000 wool spindles and 425,000 cotton spindles now in place. Further growth expected.

Argentina is much in the news these days. She is a proud and commercially busy country and enjoys a standard of living which is more comparable to ours than is that of many another nation of equivalent size. Her textile industry, although small by our standards, is relatively modern and efficient; and in this article a cotton broker, long associated with the industry in and near Buenos Aires, predicts a healthy future for it.

ARGENTINA was, is, and will long continue essentially a cattle country. Why not? There is nowhere on earth a bigger one-piece spread of greener pastures. On these the sun shines, rains fall, grass grows. Cattle are fruitful and multiply. Good money. Little labor. Free and easy living. What more can be asked?

To cattle's Big Top, even farming, the country's second major enterprise, is but a side show. Other occupations are merely ways of making money to invest in land and in cattle. In Argentina the goodly estate of booted and spurred *estanciero*, or ranch owner, is the goal towards which ambition tends. This achieved, ambition ends.

MUST EXPORT. Talk of intensive industrialization for Argentina is diluted eyewash. Argentines are no fools. They know that until their 15 millions grow to 30 they depend on foreigners to absorb the surpluses of their farms and ranches. To have and hold outlets in industrialized countries abroad, Argentina must buy manufactured products from those lands.

To double Argentina's population offers more drawbacks than appear on the surface. Were the bars lowered to the ground, maybe millions of immigrants could be attracted. But Argentina needs time to melt foreign elements already in the pot. Dumping in more ingredients won't help.

Moreover, in contrast to Nature's bounteousness in endowing Argentina

Fig. 1. A modern Argentine mill organized by American capital—Sudamtex S. A. Textil Sudamericana, at Buenos Aires.

Fig. 2. Accounting section of new general offices in Sudamtex mill, equipped with air conditioning, fluorescent lighting, and sound-absorbing ceilings. Window sections of walls are of glare-eliminating blocks consisting of glass plates with insulating glass fiber in between.

THE STORY OF SUDAMTEX

The pictures selected to illustrate this article were all taken at the Sudamtex S. A. Textil Sudamericana plant in Buenos Aires, the only Argentine mill organized with American capital. It was established in 1935 and now employs 2,200 people. Although production was started by American technicians, only the top management remains American.

Under one roof the plant cards, spins, weaves, bleaches, dyes, prints, and finishes—and entirely on American machinery. The product is mainly printed cotton dress goods, with some continuous-filament rayon fabrics, all sold locally. A branded product, "Firmetex" (meaning "fast-color textiles"), is helping to promote the advantages of American vat dyes in Argentina.

Argentine labor regulations are strict. Although the mill is on three 48-hr. shifts, women may not be employed between 8 p.m. and 7 a.m., which means that more men than women are employed. One particularly interesting Argentine law requires that after three months a worker must be considered a "permanent" employee, who cannot, with few exceptions, be discharged without an indemnity being paid by the employer. The indemnity ranges from one month's pay upward, according to the length of the employee's service.

To preserve the health of employees, the Sudamtex company has lately installed a very attractive and efficient medical department, which would arouse the envy of any textile visitor from the States. The 24-hr. medical service, including dental, is free to anyone in the plant. The staff consists of a full-time doctor, two medical nurses, two dentists, and a dental nurse. From 100 to 120 patients are treated daily.

Among the Americans actively engaged in operation of this mill, one of the largest in Argentina, are David S. Rosenthal, president, and Lawrence F. Keating, general superintendent. Both obtained their major textile experience in long association with the United Merchants & Manufacturers, Inc., of this country.

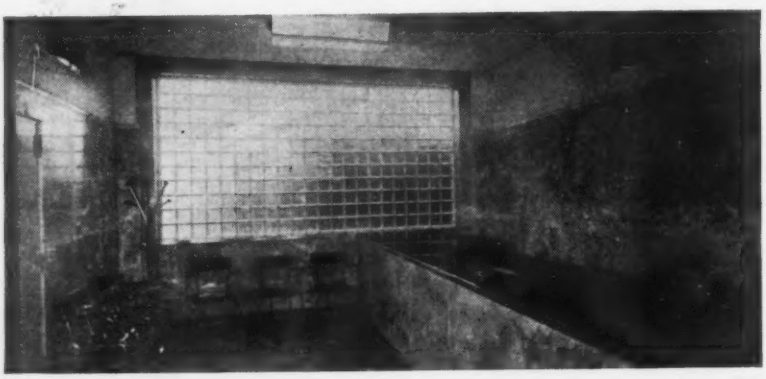


Fig. 3. Attractive reception room of elaborate new medical department in the Sudamtex Mill. Window in this room is made of locally produced glass brick; walls, of local marble; and floors, of mosaic tile. In other rooms of the medical department, the walls are green glass; and the fittings, chromium.

with facilities for farming and grazing, is her niggardness in gifts favoring industrialization.

True, the country has proven oil fields. Experts believe she has undiscovered reserves. Whether she has or not remains to be seen. Coal she may have. But if so, it lies so far back of beyond it will be long before it can be exploited. The same can be said for iron. Water power the country has. That is so far from populated districts its value to industry is very small.

TEXTILES IN LEAD. Despite drawbacks, there are, nevertheless, a few industries based on Argentine raw materials that have sound legs to stand on. These have already made progress, and will make more. Of these, after meat packing, the textile industry is far in the lead.

Argentina has long been among the world's greatest producers of wool. Compared with her wool clip, Argentina's cotton crop does not amount to much. Still, cotton has taken root in Argentina, and its production is growing faster than the country's spinning industry can ever hope to consume.

Stimulated by high prices, Argentina's crop of flax fiber has increased considerably. So far all flax lines have to be exported. Some tow, however, is spun in domestic mills. Spindles for long fiber will be imported as soon as Belfast manufacturers can ship them.

Argentina grows a little hemp and jute. But this war baby will probably be dropped when prices decline. Chilean hemp and Indian jute are normally too cheap to permit of competition. The same may be said of henequen, when the East African product comes on the market again.

Shut off from supplies of raw silk, the culture of silk worms has made some progress in Argentina. Once oriental silk can be had again, Argentine growers will probably cease production. Of indigenous wild fibers now being exploited for mixture with jute, these will be neglected when jute prices return to normal.

Argentina's production of cellulose for rayon yarns is small as yet. However, it should increase rapidly owing to abundance of domestic raw material.

Many Indian tribes inhabiting territory now included in Argentina were, from time immemorial, expert spinners, weavers, and dyers of llama, alpaca, vicuna, and guanaco wools—also of wild cotton and other indigenous fibers. This skill, inherited by the rural population of many districts, means that most of the woolen goods used now by poorer classes of these

regions is home spun, woven, and dyed. Home spinning of cotton has died out. But home weaving of factory-spun cotton yarns is still of some importance.

PROGRESS AFTER LAST WAR. Grouping of textile workers in small shops is of recent origin in Argentina. It started with the weaving and knitting of imported woolen yarns. Weaving of imported cotton yarns started much later. With the exception of a few wool spindles, no spinning was done in Argentina before World War I.

Foreign yarns were hard to get in Argentina during War I. This induced weavers to begin buying spindles on a small scale. Attracted by prospects of fancy profits, outsiders also bought spindles, placing them in small mills dedicated exclusively to spinning.

However, the enthusiasm engendered by War I and its short subsequent boom was checked by the slump of 1921. The industry made slow progress during the prosperous years 1922 to the last quarter of 1929. The big depression, hitting Argentina in the early 30's, gave the industry its second notable boost. Tight money at home, and depleted balances abroad, induced Argentina to clamp down on imports. To order foreign goods an import permit became necessary. This was hard to get.

These restrictions made the importation of textiles a tough proposition. Many large houses liquidated, employing proceeds in the purchase of spinning and weaving machinery. Established mills expanded their plants. The years 1933 to 1939 witnessed steady growth of Argentina's textile production.

With the advent of World War II, the industry in all branches—most notably in spinning—began making profits. Cheap domestic wool and cotton, and large stocks of cheaply imported jute, sisal, hemp, silk, and chemical linters, combined with a demand for finished goods from domestic and foreign markets, gave Argentina spinners, weavers, dyers, and converters an unusual opportunity.

The rush to buy more machinery started apace. Some was bought at reasonable prices and actually reached the country. Some for which expensive buildings were erected in anticipation of arrival was sunk by U-boats. Despite difficulties, a little machinery has been reaching the country throughout the war years.

BRITISH AND SWISS MACHINERY. Since no official statistics are available, it is impossible to say what rank the various manufacturing countries occupy as suppliers of the textile machinery already in Argentina. But one who is daily in and out of Argentine mills estimates British first, Swiss second, American third, and German fourth. Some Italian, French, Belgian, Japanese, and Argentine equipment is also observable.

Who gets the lion's share of the postwar trade depends on who supplies first-class textile equipment quickest. The race is apparently between American, British, and Swiss manufacturers.

Regarding the prospects of Argentine manufacturers who have of late made considerable progress in this line, only the future will tell whether they can compete in price and quality. On this score opinions differ. The writer is pessimistic. At present they ask and obtain higher prices for inferior equipment because they deliver quicker than foreign manufacturers.

An idea of equipment in place in Argentina is given in Tables I, II, and III.

Production of rayon yarns in Argentina began in 1936. By 1941, it had reached about 8,000,000 lb. yearly. Since then adequate supplies of foreign—principally American—raw materials being unobtainable, annual output has declined. However, production is looking up again. Domestic raw materials are being used.

Textile mills in Argentina have long been running three 8-hr. shifts daily, Sundays and holidays included in some cases. Thus, wear and tear on equipment has been severe. Nothing, however, can be scrapped. Worn machinery is patched up as best the limited supply of spare parts permits. All kinds of improvisations are resorted to for turning out finished goods as fast as possible.

MILLIONS FOR INVESTMENT. Although the industry has millions awaiting investment in new equipment, it is not hopeful of getting very much in a hurry. After the war, manufacturing countries will supply their own nationals before accepting orders from Argentina.

Argentine mill owners' first job is to replace antiquated equipment with up-to-date, labor-saving machinery. This in itself means heavy investments. Substantial plant expansion will be undertaken only when this job is out of the way.

Profits of Argentine mills since 1940 have not come from domestic market alone. Some of them were drawn from foreign sales, especially those to other Latin American countries—also to those of South Africa.

Buyers there turned to Argentina because they could get very little from previous sellers. Hard pushed for goods, they were slack about the standing of Argentine shippers, lenient regarding quality, and liberal in discussing price. Above all, they demanded quantity and early delivery.

Conservative Argentine mills refused business they could not handle without lowering quality standards.

(*Continued on page 184*)

TABLE I—SPINDLES

	1939	1940	1941	1942	1943	1944
Cotton	326,291	346,758	366,765	381,582	403,582	425,000
Wool	215,075	219,963	249,751	266,401	287,213	299,701
Wool & Cotton	3,030	2,810	838			
Flax	1,152	1,152	1,152			
Hemp & Jute	5,128	5,126	3,728	No statistics available.		
Sisal	490	709	978			
Sundry	2,427	2,329	3,117			

TABLE II—LOOMS

Cotton	5,593	5,685	6,406	7,198	8,095	8,634
Wool	2,945	3,389	3,080	3,436	3,652	3,898
Silk & Rayon	3,280	3,154	3,208			
Flax & Hemp	96	115	115	No statistics available.		
Sundry	306	511	502			

TABLE III—KNITTING MACHINES

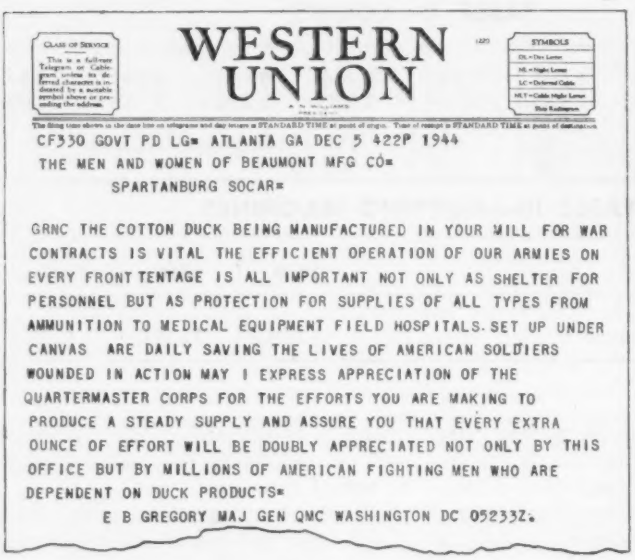
	1939	1940	1941
Cotton, wool, silk & rayon	12,043	12,060	12,218

How One Mill Achieves More DUCK PRODUCTION

New "defense" housing in the Beaumont villages provides an increase of 50% in housing facilities for workers and their families.

HIGHLIGHTS: Manpower shortage is most critical element. Beaumont Mfg. Co. attacks problem with health services, homes, cafeteria, nursery, and publicity. Volunteers permitted to work extra shifts.

By T. O. OTT, JR.
Southern Editor, TEXTILE WORLD



WESTERN UNION

CF330 GOVT PD LG= ATLANTA GA DEC 5 422P 1944
THE MEN AND WOMEN OF BEAUMONT MFG CO=
SPARTANBURG SOCAR=

GRNC THE COTTON DUCK BEING MANUFACTURED IN YOUR MILL FOR WAR CONTRACTS IS VITAL THE EFFICIENT OPERATION OF OUR ARMIES ON EVERY FRONT TENTAGE IS ALL IMPORTANT NOT ONLY AS SHELTER FOR PERSONNEL BUT AS PROTECTION FOR SUPPLIES OF ALL TYPES FROM AMMUNITION TO MEDICAL EQUIPMENT FIELD HOSPITALS SET UP UNDER CANVAS ARE DAILY SAVING THE LIVES OF AMERICAN SOLDIERS WOUNDED IN ACTION MAY I EXPRESS APPRECIATION OF THE QUARTERMASTER CORPS FOR THE EFFORTS YOU ARE MAKING TO PRODUCE A STEADY SUPPLY AND ASSURE YOU THAT EVERY EXTRA OUNCE OF EFFORT WILL BE DOUBLY APPRECIATED NOT ONLY BY THIS OFFICE BUT BY MILLIONS OF AMERICAN FIGHTING MEN WHO ARE DEPENDENT ON DUCK PRODUCTS=
E B GREGORY MAJ GEN QMC WASHINGTON DC 05233Z.

Covers of the mill publication fre-

SERIOUS SHORTAGES of tentage duck with which to meet the needs of the armed forces overseas have required drastic action by the Quartermaster Corps, the War Production Board, and the War Manpower Commission. This action has taken the form of directives to mills to change looms over to duck or duck substitutes, direct appeals to mill management and employees to step up production, enlistment of the aid of senators and governors from duck-producing areas, and the sending of liaison officers from the Army Service Forces to work with mills making duck or duck substitutes.

Beaumont Mfg. Co., of Spartanburg, S. C., one of the larger producers of duck and winner of the Army-Navy E award with three stars, has been carrying on with the production of duck at a high level of performance for an extended period. When appeals were made for more production recently, it immediately increased its search to find ways of doing what was asked. It has a comprehensive program to stimulate the production of additional duck, which is largely a manpower problem.

Beaumont plans to allow workers to volunteer for extra-shift operation for two or three months until the emergency is past, rather than for an indefinite period of extended operation. Employees in the past had worked for long periods on a 7-day week, and it was felt that they would respond better if there was a time limit.

PROMOTIONAL WORK. A telegram sent to the employees by Maj. Gen.

E. B. Gregory of the QMC, in which he appeals to the workers to help in this emergency, was reproduced for bulletin boards in the mill. The company magazine, *The Beaumont E*, will assist in telling the story of the needs for more production of duck, as it has done so consistently and effectively in the past. Plans include newspaper advertising to inform the public of the increased urgency of the duck program.

At this plant, the personnel department has long been working on ways to help solve such wartime problems as housing, transportation, child care, domestic help, sickness, and absenteeism. Fortunately, due to long-range planning and energetic execution, many things have already been done to assist employees.

Over 100 new 4- and 5-room "defense" homes have been added to the village, resulting in a 50% increase in housing facilities. Buses are operated for the mill within a radius of 40 mi. to bring in employees from outlying communities; and the personnel department works closely with the local rationing board to get gasoline and tires for those employees who must use their cars. A nursery for children has been set up in the Beaumont community to care for children of working mothers; and plans are being made to establish nurseries in outlying districts where a number of employees live, so as to allow additional mothers to come to work. A fine new cafeteria has recently been put into operation close to the mill to provide well-balanced hot meals. At certain hours the cafeteria is open to the public, and the children of employees are also able to secure well-balanced meals.

HEALTH PROGRAM. Safeguards provided for the health of employees include a modern clinic, a plant doctor, and a nurse. In addition, two visiting nurses check into the causes of illness and report back to mill supervisors. Nursing classes on how to take care of sickness at home have been conducted for adult women in the community, and virtually all employees and their families are inoculated against epidemic diseases. At a nominal cost, the employees also carry one of the most complete health and accident insurance policies known. Cost of illness beyond that covered by the insurance is handled by the company.

In addition to these many safeguards for the health and well-being of the employees and their families, the personnel department makes every effort to keep workers happy and working at high efficiency.

All these measures aid in keeping the worker on the job regularly; but if an employee decides to leave for any reason, the personnel department tries to get the facts in a separation interview to see if the problems of the worker can be solved. In this manner, they are able to retain some workers that might otherwise be lost. The army officer assigned by the ASF to the plant also interviews these workers before they leave.

The mill cafeteria is modern and has extensive facilities for food preparation. Several well-balanced meals are on the menu.

This play center or nursery has helped working mothers stay on the job. Other nurseries are planned for outlying districts.

MORE WORKERS NEEDED. Recruitment of workers is still a big problem to be solved. During part of the year, senior high-school students and teachers from schools in outlying communities have helped make duck. Farmers have also worked part time in the mill and have helped greatly. At present most of these people are not available and their loss is felt. Extensive training programs have been in operation for some time, and this has helped get the new employee on the job quickly. Regular employees have shown a great interest in persuading their friends who were not employed to apply for work at the plant. One enthusiastic employee has been responsible for bringing in 26 new employees.

The situation looks hopeful; and with the hearty cooperation between procurement and manpower agencies and mills, it now seems that the present emergency is going to be met if unforeseen conditions do not develop.

LOOMFIXER'S TOOLS—Weapons of Production

HIGHLIGHTS: Measuring tools for fixers should include several rules, calipers, square, plumb bob, etc. Stainless-steel rule doubles as a straightedge.

LOOMS ARE WEAPONS OF PRODUCTION. Without the efficient operation of looms, our armed forces would find themselves without clothing, without much of their present equipment, and without shelter in the field.

Extensive training courses are offered in vocational schools and in the mills themselves; many of the courses are under the programs prepared by the War Manpower Commission. While such courses are intended to be all-inclusive in that they cover the adjustment of loom mechanisms, little thought has been given to the tools of production which the loomfixer must acquire and work with.

Many a loomfixer does not know the proper name of some of the tools in his box. The mere collecting of a large number of tools will not materially assist him if he has not made the proper selection and if he does not know how to use them.

To cope with this condition, TEXTILE WORLD is offering suggestions which may assist the fixer in selecting a set of tools that will be of value to him.

All the tools listed may not be necessary. Also, a fixer may find it desirable to have an additional number of tools in his box from those listed. But the following tools have been selected as containing the basic tools necessary to handle a loomfixing job efficiently and in the least time.

TOOL CLASSIFICATION. Tools will be classified under three broad headings. First to be considered will be measuring tools. Such items as rules, tapes, calipers, micrometers, etc., are included. Second, consideration will be given to wrenches and similar tools. Included will be special wrench sets recommended by some loom manufacturers, and other special tools. Third, special gages and similar equipment for adjusting looms will be considered, along with various miscellaneous tools.

In this article, which is the first of a series, we discuss only measuring tools.

MEASURING TOOLS. Aside from a 6-ft. flexible type of metal tape, a loomfixer should have a 2-ft. stainless-steel rule. This 2-ft. rule will double as a straightedge on numerous occasions and will be found helpful in making reed-alignments. The same rule or the 1-ft. rule may be used for aligning the reed and the shuttle-box guide, for setting the pick, for measuring the space between the reed and the fell of the cloth, etc.

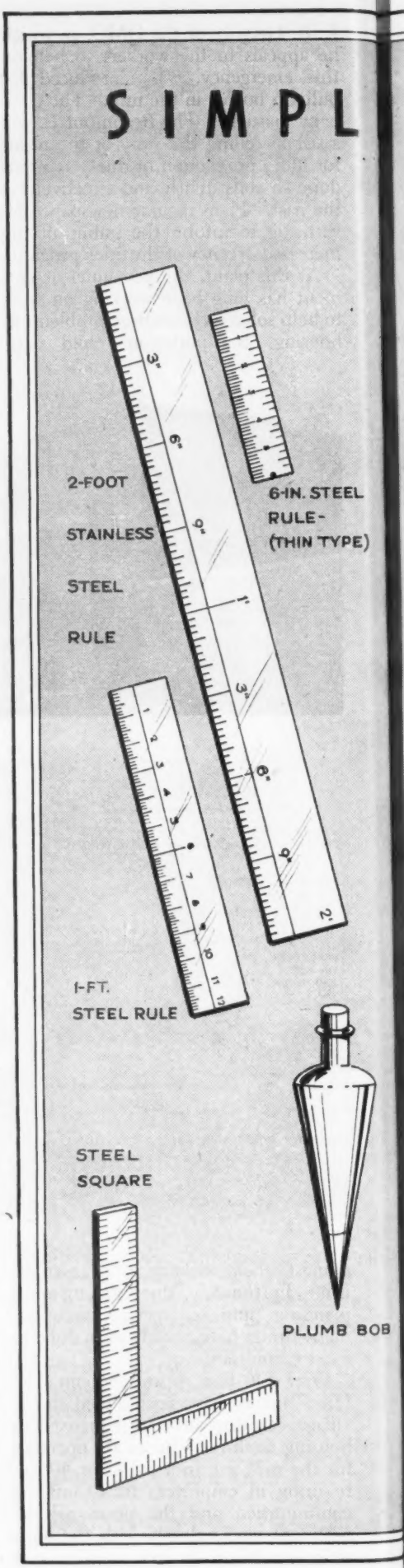
For small measurements that do not have to be accurate to more than 0.010 in., a 6-in. steel rule may be used. This rule should be as thin as possible to obtain accuracy of measure, as the division lines are then closer to the work.

To assist in converting fractions to decimals and vice versa, the accompanying conversion table is provided.

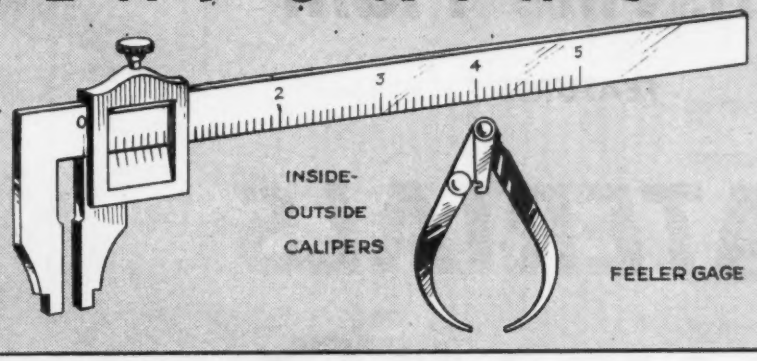
This table shows the relationship between various fractional parts of an inch and its decimal equivalent. If a fixer has to make a setting of 0.03 in. and does not have a feeler gage or a decimal rule, by referring to the table he finds that this measurement is equal to about 1/32 in., or 2/64 in. Having a steel scale reading in 64ths of an inch, he may approximate this setting.

A small plumb bob and also a small steel square will be of assistance when loom parts have to be aligned.

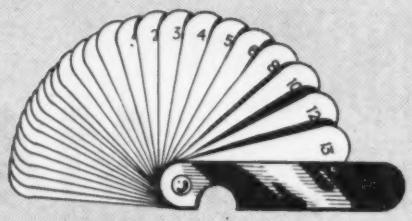
An inside-outside caliper will double for individual sets of inside calipers and outside calipers. The combination inside-outside caliper is, for most textile uses, of sufficient accuracy. A set of feeler gages is of assistance in setting certain motions. A wire-gage tester will prove invaluable for determining drill sizes required. Some fixers include a small pick glass for use at places requiring magnification.



MEASURING TOOLS



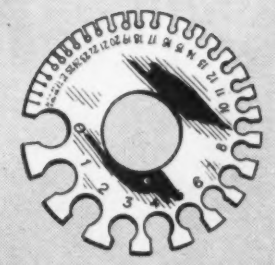
INSIDE-
OUTSIDE
CALIPERS



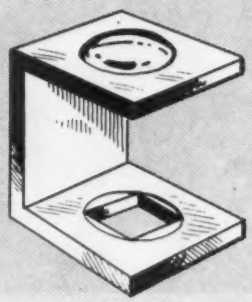
FEELER GAGE

TABLE OF DECIMAL EQUIVALENTS

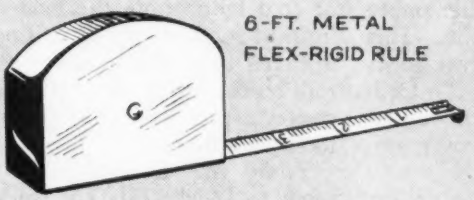
1/2	4th	8th	16th	32nd	64th	Decimal	1/2	4th	8th	16th	32nd	64th	Decimal
					1	.0156						33	.5156
				1	2	.0312					17	34	.5312
					3	.0468						35	.5469
			1	2	4	.0625				9	18	36	.5625
					5	.0781						37	.5781
				3	6	.0937					19	38	.5937
					7	.1094						39	.6094
		1	2	4	8	.1250			5	10	20	40	.6250
					9	.1406						41	.6406
				5	10	.1562					21	42	.6562
					11	.1719						43	.6719
			3	6	12	.1875				11	22	44	.6875
					13	.2031						45	.7031
				7	14	.2187					23	46	.7187
					15	.2344						47	.7344
	1	2	4	8	16	.2500		3	6	12	24	48	.7500
					17	.2656						49	.7656
				9	18	.2812					25	50	.7812
					19	.2969						51	.7969
			5	10	20	.3125				13	26	52	.8125
					21	.3281						53	.8281
				11	22	.3437					27	54	.8437
					23	.3594						55	.8594
		3	6	12	24	.3750			7	14	28	56	.8750
					25	.3906						57	.8906
				13	26	.4062					29	58	.9062
					27	.4219						59	.9219
			7	14	28	.4375				15	30	60	.9375
					29	.4531						61	.9531
				15	30	.4687					31	62	.9687
					31	.4844						63	.9843
1	2	4	8	16	32	.5000	2	4	8	16	32	64	1.0000



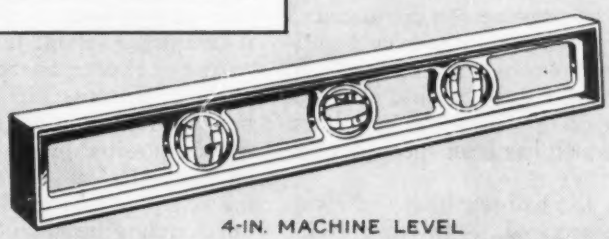
WIRE GAGE TESTER



PICK GLASS



6-FT. METAL
FLEX-RIGID RULE



4-IN. MACHINE LEVEL

Scottsville Plant

FEATURES

MATERIALS HANDLING

HIGHLIGHTS: Beams to be delivered automatically to twisters. Women employees predominate. Mill is seventh U. S. Rubber textile unit.

WOMEN can compose about 70% of the employees in the manufacturing operations of the new Scottsville, Va., tire-cord plant of the U. S. Rubber Co., largely because of a materials-handling system (dotted lines, Fig. 1) which has been specially engineered.

When the half-ton beams of rayon yarn are received, a two-fork Baker truck will take them to storage racks (Fig. 2). These racks are being built with a pitch of ¼ in. per ft., so that the oldest beams are always at the end where a crane can deliver a beam to any "ply" twister. This delivery is to be done automatically when the system is completed (about June).

At the twister, an operator will, by pushing buttons, lift off the empty beam and position the full one. This will be possible by having two hoists on one bridge (see inset, Fig. 2). Ceiling height (15 ft.) is sufficient to permit traveling beams to pass over running beams on machines.

The same conveyor will deliver empty beams to a similar storage rack with a reverse incline from that shown in the sketch, so that the beams roll close to the entrance of the receiving room, where they can be returned to the freight cars.

From the "ply" (beam) twisters, bobbins of rayon proceed to the 9 respoolers, 65 cable twisters, or 20 loom creels in conventional roller trucks. But at the looms, another specially engineered conveyor system is being installed to carry the huge rolls of cord fabric from the looms to the finished-goods storage area. Looms are installed in a double row with cloth rolls on the inside alley. Here a bridge conveyor can pick up cloth from any room on either side.

From the finished-goods storage room to freight cars (or trucks) the same Baker truck is used—except that the double fork which was used for beams is replaced by a platform.

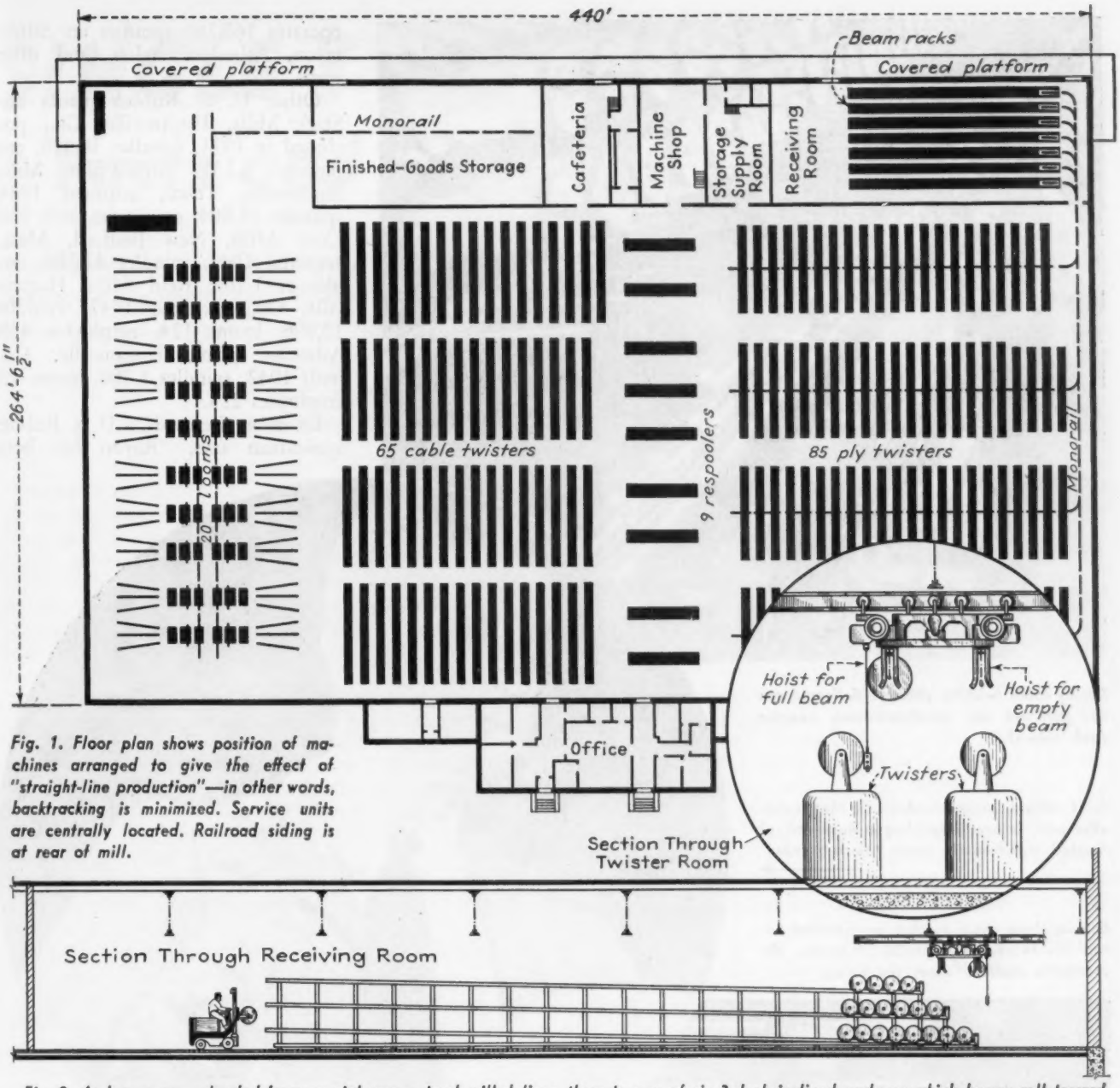


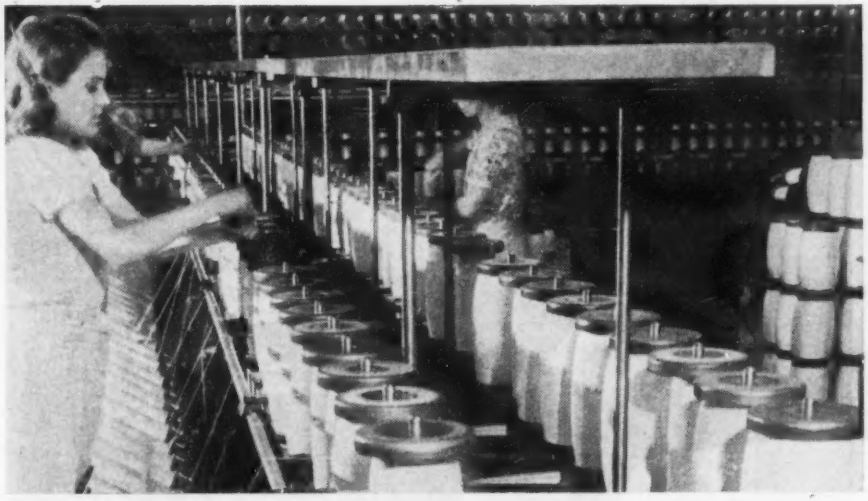
Fig. 1. Floor plan shows position of machines arranged to give the effect of "straight-line production"—in other words, backtracking is minimized. Service units are centrally located. Railroad siding is at rear of mill.

Fig. 2. As beams are unloaded from special cars, a truck will deliver them to one of six 3-deck inclined racks on which beams roll toward conveyor system. A seventh rack, with a reverse incline, will be used to store empty beams to be returned to rayon manufacturers.

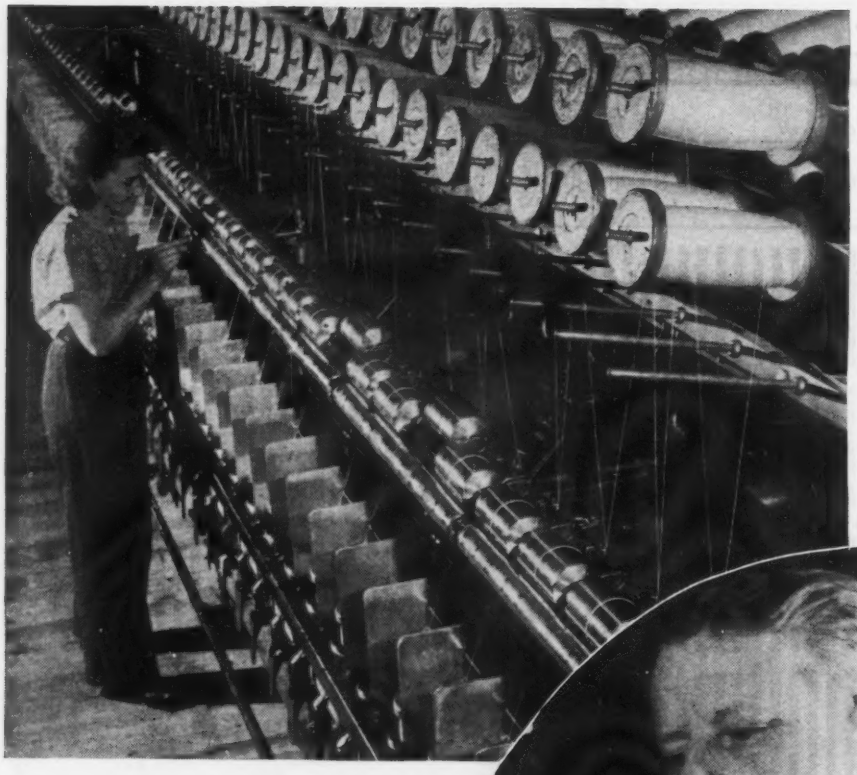
ALL-RAYON PLANT. Although the Scottsville plant is U. S. Rubber's seventh textile unit, it is the first devoted exclusively to processing rayon. Construction was financed ($2,240,000) by the Defense Plant Corp., and the plant is leased by U. S. Rubber.

At the time this article appears, it should be reaching full production, which will require the employment of 300 persons. The capacity of this plant, 12,000,000 lb. a year, represents 5% of the authorized rayon-cord production which is badly needed for the war.

U. S. Rubber first ventured into the textile business in 1917 when it acquired controlling interest in the Winnsboro Mills, Winnsboro, S. C. Today it employs more than 5,000 people in its textile operations and



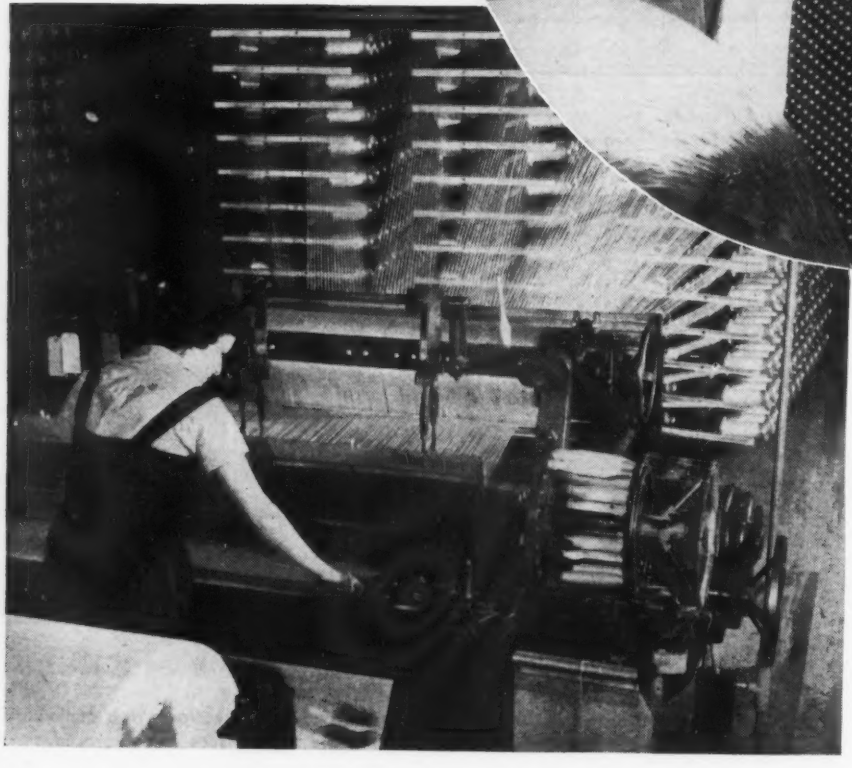
After the 1100-den. rayon is "ply" twisted (term is carryover from cotton), it is backwound to much larger bobbins prior to being creeled in on cable twisters seen in background.



During cable twisting, yardage delivered can be governed by pre-determining counter (not shown).

O. L. Ward, superintendent of the Scottsville mill, is here inspecting a huge roll of finished high-tenacity rayon tire-cord fabric. →

Bobbins from cable twisters are creeled behind the twenty 64-in. Model XP looms. An automatic machine winds the filling.



operates 168,260 spindles on cotton, rayon, Asbeston, nylon, and other yarns.

Other U. S. Rubber plants are: Stark Mills, Hogansville, Ga., purchased in 1931, spindles 36,420, employees 1,131; Shelbyville Mills, Shelbyville, Tenn., acquired 1934, spindles 24,804, employees 863; Fisk Cord Mills, New Bedford, Mass., acquired 1940, spindles 42,588, employees 1,200; Reid Mills, Hogansville, Ga., acquired 1942, spindles 12,096, looms 124, employees 429; Asbeston plant, Hogansville, Ga., built 1942, spindles 1,700, looms 19, employees 223.

Of rayon tire cords, a U. S. Rubber spokesman says, "Rayon has been found superior to cotton in the manufacture of heavy-duty bus, truck, and airplane tires; but officials believe cotton will continue to be one of the leading fibers used in the fabrication of rubber goods. It is still used in the manufacture of light-duty tires; and it is a basic material in footwear, clothing, sea rescue equipment, hose, conveyor belts, and scores of other products now being produced in great quantities."

Outstanding U. S. Rubber textile developments are light-weight asbestos fire-fighting suits and Ustex, a cotton yarn treated by bonding and stretching to increase its tensile strength.

SINGLE TWIST— Facts and Fallacies

HIGHLIGHTS: Several methods for twist testing. Irregularities in yarn diameter, staple length, humidity, contraction, and other factors cause variations. Formulas are approximations. Optimum strength not always goal.

By T. O. OTT, JR.
Southern Editor, TEXTILE WORLD

Interesting facts concerning twist in single cotton yarns have been published in the past decade. While it has been generally recognized in the industry that some over-all methods and formulas are needed by the spinner to obtain the correct twist for the yarns he is to make, he has had to rely on old, time-worn, rule-of-thumb methods and formulas to arrive at the optimum. Most spinners have a very good working knowledge of twist and its related factors, but it is hoped that this material will stimulate mill men to do some practical research of their own. Although exhaustive study has not been possible, the data presented should serve as a contact for the mill man and the technical research specialist.

TWIST IS DEFINED by the American Society for Testing Materials as "the turns about its axis, per unit of length, observed in a fiber, yarn, or cord." The society's handbook continues, "It is expressed (1) as turns per inch, (2) as turns per meter, (3) and by helix angle in a structure of known diameter."

Due to variations in the fibers to which twist is applied, the factors in the machinery used to apply twist, and the conditions under which manufacturing is accomplished, it is difficult to predict accurately the effect of twist on yarn by any mathematical formula. Twist bears an important relationship to strength, elasticity, and cover of yarns in fabrics; and the amount of twist is, in turn, affected by the many variable factors mentioned above. Various investigations have been made of twist in cotton yarn during the past ten years, many of which were reported in TEXTILE WORLD; but there appears to have been no attempt to coordinate much of this information for presentation and discussion so that mill men and technicians may organize for further research.

Review of some of the articles available over the past ten years on this subject and discussions with mill and technical men show a need for a more thorough investigation of twist in relation to humidity, uniformity, and yarn diameter, and also the need for formulas to predict the amount of twist under varying conditions.

TESTING FOR TWIST. The basis for any twist study is the accuracy of twist determination in yarn. Finding single twist in a single yarn requires somewhat more elaborate methods than does finding the twist in ply yarn.

A simple method to determine single twist is to add turns with a standard twist counter to an S- or Z-twist yarn, releasing the weight until the yarn is ruptured and reading the turns added. Put another 1-in. length of yarn in the twist counter and, without releasing the weight, remove the twist, and continue turning the counter in the same direction until sufficient twist is added to sustain the weight without breaking. Release the weight and continue twisting the yarn in the same direction until the point of rupture is reached; then read the turns required to untwist, twist, and rupture the yarn. The difference in the two readings divided by two gives the number of turns in the original yarn. A full explanation of this method and a chart appeared in TEXTILE WORLD, November, 1934.

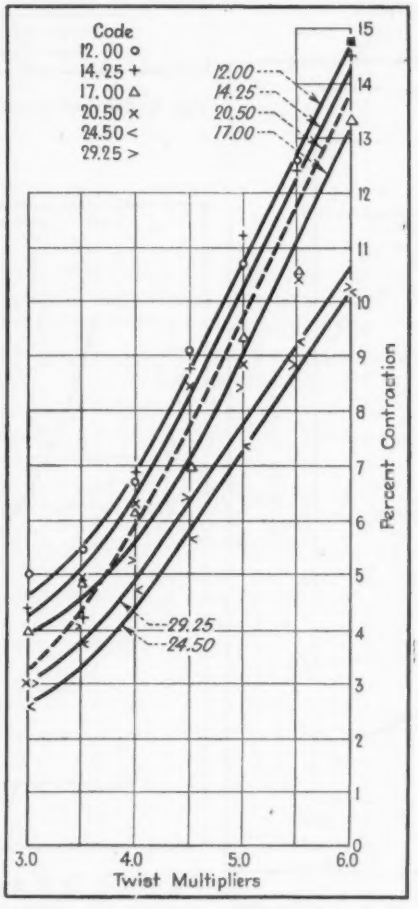


Fig. 2. Relation between twist multiplier and percent contraction.

Where a twist counter is being considered, its accuracy can be determined by spinning a so-called "mock grandelle" yarn from double roving with one end of the roving colored with a fairly bright cold-water dye. The yarn thus prepared shows the twist as it actually exists, and it can be counted with a magnifier. A strand of the yarn that is to be investigated can be placed in a twist counter; and, before any mechanical measurements are made, the actual number of turns in the 5- or 10-in. lengths can be counted absolutely accurately with the magnifier. Following this, the twist counter itself can be operated and the results obtained by the two methods compared.

A study of the amount of tension has been made by Prof. Herbert J. Ball, of Lowell Textile Institute; and some conclusions on the proper amount of tension to apply to a yarn without stretching have been reached. These are useful in making accurate twist tests.

UNIFORMITY OF TWIST. Inch-by-inch twist in cotton yarn will not be found to be uniform. This is due largely to the fact that in the drafting of the roving all unevenness is transmitted to the thinner sections of the yarn, because such sections take twist more readily than the thicker sections. Other factors, such as variation in twist from inside to outside the spinning bobbin and change in balloon, also affect twist uniformity in cotton yarn.

ACCURACY NEEDED IN ESTIMATING. In order to set up standard twists for different numbers and classes of spun

yarn, the practical method has been to substitute twist multipliers in the formula $T = M\sqrt{C}$, where T equals twists per inch in yarn, M equals twist multiplier and C equals count.

This formula was first presented by Joseph Kochlin on Nov. 28, 1828, before the Societe Industrielle de Mulhouse, and expresses a simple relationship between the count, twist multiplier, and the number of turns per inch. Although this formula has been generally used by the cotton-textile industry for about 116 years, it is only a mathematical approximation based on the assumption that the exposed fibers are arranged in helices on a circular cylinder and that two yarns of different count have the same density when their angles of twist are equal.

Observed values of the angle of twist are consistently less than computed values; and the difference tends to increase with the count of the yarn, according to Research Paper PR 826, "Mechanical Properties of Yarn," of the National Bureau of Standards. This indicates that the Kochlin formula does not reflect the true action of twist on fibers.

This research paper includes tables of data from tests on breaking strength, elongation at rupture, diam-

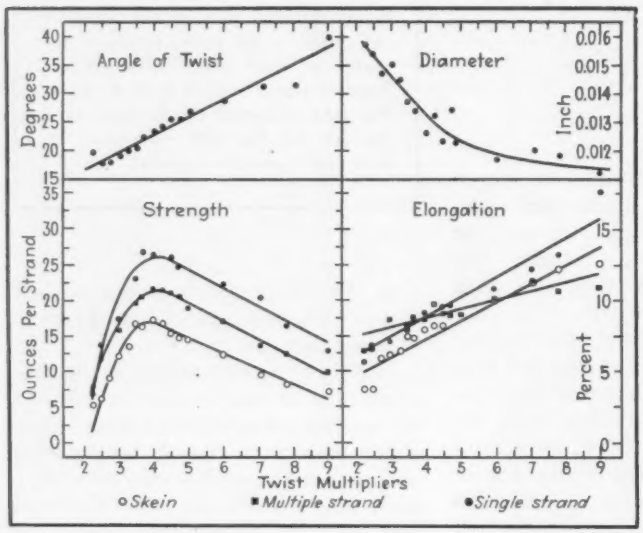


Fig. 1. Effect of twist multiplier on breaking strength, elongation at rupture, diameter, and angle of twist of 10s cotton yarn.

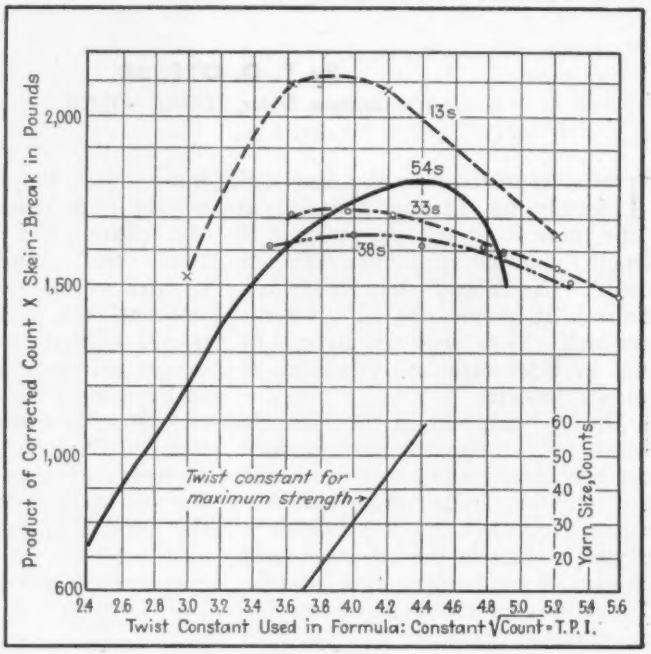


Fig. 3. Relation of yarn twist to strength.

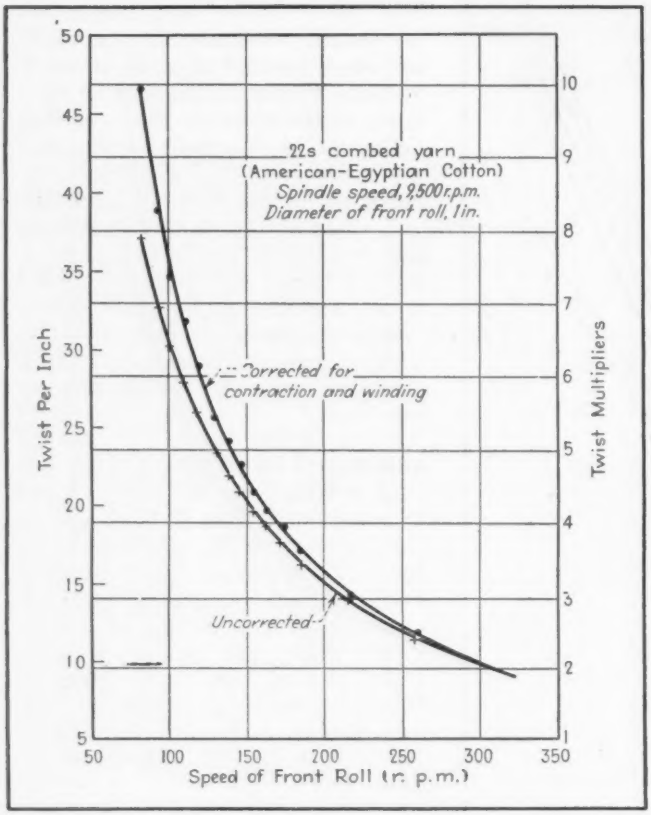


Fig. 5. At low degrees of twist the net effect of contraction and winding is quite small, but with higher twists an important error is introduced if contraction is ignored.

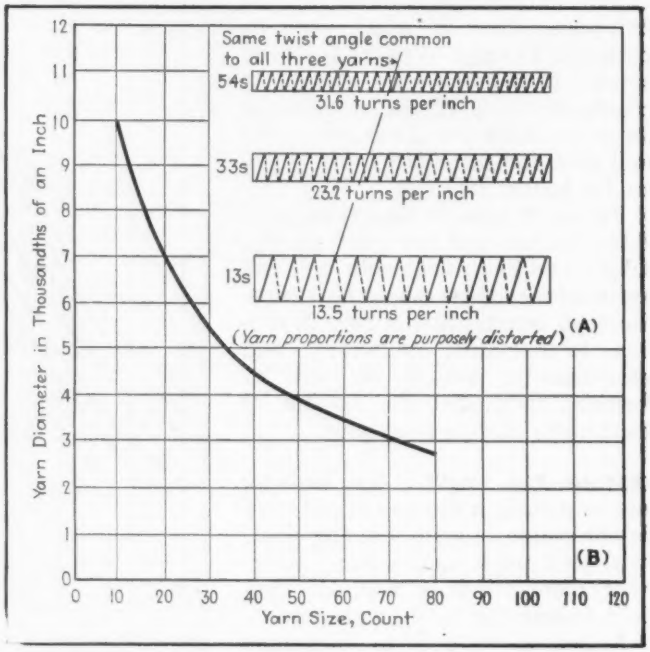


Fig. 4. (A) Twist angle and turns per inch for yarns of maximum strength. (B) Diameters of cotton yarns of different counts containing twists that produce maximum strength, as measured on a Randall & Stickney thickness gage under a 3/8-in. presser foot.

eter, and angle of twist of 10s cotton yarn. Curves are plotted showing the relationship of skein, multiple-strand, and single-strand tests, Fig. 1. It is suggested that some of the future investigations be on single-end as well as skein basis.

TWIST, CONSTANT, AND STAPLE LENGTH. Efforts have been made to establish the twist constant that can give the maximum yarn strength for each commercial staple length, Table I. These constants can be substituted in the standard formula T.p.i. = Constant $\sqrt{}$Count, and they do allow for the effect of changes in staple length.

TWIST AND CONTRACTION. In a recent bulletin published by the Lowell Textile Institute—abstracted in the March, 1943, TEXTILE WORLD—the following conclusions were drawn by the author, A. J. Woodbury, as to the action of twist on the yarns shown on the chart, Fig. 2: (1) contraction increases as the twist multiplier increases; (2) the slope of the curve is less for low twist multipliers; (3) the coarser the yarn number or the greater the number of fibers in a cross-sectional area, the more rapid is the rate of contraction. While the first two conclusions are fairly obvious, the third is not entirely borne out by the curves shown in Fig. 2. For example, if the point of contact of the curves in the right margin of the chart is noted, there is a wide difference in the slope of 24½s yarn and 17s yarn but no appreciable difference between the slopes of 14½s and 12s. A noteworthy conclusion not drawn from this chart by the author is the fact that the slopes of the curves for all yarn numbers on twist multipliers between 3 and 4.5 closely approximate each other.

This points to the need for further tests along these lines, possibly with a wider range of yarn numbers in smaller steps.

One reader in commenting on Mr. Woodbury's experiments sent in the following formulas which he claims makes it easy to determine the contraction of any yarn when the twist multiplier, twist per inch, and yarn number are known.

$$\frac{\dfrac{\text{T.p.i.}}{\sqrt{\text{Actual No.}}} - 1.91}{0.366} = \text{Percent Contraction}$$

For example, say the actual yarn number was 9.5s, twist multiplier 4.75 and turns per inch 15, we should have:

$$\frac{\dfrac{15.00}{\sqrt{9.5}} - 1.91}{0.366} = 8.06\% \text{ Contraction}$$

TABLE I

Spinning Twist Multipliers for Maximum Yarn Skein Strength

Classer's Staple Length	Twist Multiplier
(Inches)	
3/4	5.35
25/32	5.15
13/16	5.00
27/32	4.85
7/8	4.70
29/32	4.60
15/16	4.45
31/32	4.35
1	4.25
1-1/32	4.20
1-1/16	4.10
1-3/32	4.05
1-1/8	3.95
1-5/32	3.90
1-3/16	3.85
1-7/32	3.80
1-1/4	3.75
1-9/32	3.70
1-5/16	3.65

The above spinning twist multipliers should result in maximum yarn strength regardless of yarn count. In other words, a spinning T. M. 4.25 for 1-inch cotton will give the 10s, 20s, or 30s yarn, etc.

This information, presented by Malcolm E. Campbell of the Cotton Branch of the Agricultural Marketing Administration before a group of research workers recently, is the result of a considerable amount of work conducted in the Clemson Laboratory of the Cotton Branch.

According to the author, contraction depends almost altogether upon the twist multiplier and not the yarn number. Also, the rate of increase of contraction becomes greater as the yarn number gets lower.

TWIST AND STRENGTH. The optimum yarn for commercial use is not always the strongest yarn, although great stress is put upon maximum strength by many investigators. Strength, elasticity, covering power, appearance, and feel of a yarn are all more or less dependent upon the amount of twist it contains; and to get the yarn best suited for a particular use, some one of these qualities must be sacrificed in some degree. Much also depends upon the type, staple, and character of the cotton under consideration.

Examination of the graph of test data in Fig. 3, from tests reported in TEXTILE WORLD, Feb. 14, 1934, brings out some interesting observations. They are: (1) the 54s which was spun on long draft was a better yarn than either the 33s or 38s spun on short draft; (2) the slope of the twist curve of 13s and 54s indicates that up to the point of maximum strength, the 13s is affected more by changes in twist; and beyond that point on the decreasing slope, the 54s is affected more; (3) the twist constant for maximum strength is a straight line sloping upward to the right, which means that the constant (M) for the formula T.p.i. = M$\sqrt{}$Count must be increased steadily as the yarn grows finer if yarn strength is to be kept at a maximum.

A fallacy in the last statement can be seen in Fig. 3. The 13s, 33s, and 38s all reach maximum and are similar in shape on a given range of twist multiples.

However, the peak shown on the curve for 54s yarns does not fall in the same range of twist multipliers as do the peaks of curves for 13s, 33s, and 38s; thus indicating a change in the conditions.

Note that a straight line representing the twist constant for maximum strength does not hold true for all the yarns shown. This fact again shows the need for more tests over a wider range of yarn numbers under exactly the same conditions.

TWIST AND YARN DIAMETER. Facts on twist in the yarn measurements, yarn diameter, and the angle of twist (as brought out by Carl Brandt in TEXTILE WORLD, May, 1934) are the following: (1) In yarn measured with a Randall & Stickney gage (⅜-in. presser foot), the diameter increases with the increase in twist up to a certain point and decreases beyond that point; (2) there is a definite relationship between yarn diameter and twist per inch at the point of maximum strength; (3) the angle of twist for all yarns from a particular cotton at point of maximum strength is the same; (4) the constant (M) in the formula T.p.i. = M$\sqrt{}$Count is not flexible enough for all counts; (5) twist per inch times the diameter of the yarn of maximum strength gives a constant that is applicable to the range of counts (10s to 80s) using the same type, staple, and character of cotton.

The formula suggested was as follows:

(1) Diameter × turns per inch = Constant

(2) T.p.i. = Constant ÷ Diameter

This constant is 120 for 1⅛-in. cotton. Shorter staples require a larger constant and vice versa. On a limited amount of work done with 1-in. cotton, the constant appears to be 135.

The angle of twist for yarns will be the same at the point of maximum strength as shown in Fig. 4.

This proposed formula is a step forward in the attempt to consider the variables not accounted for in the old accepted formula T.p.i. = M$\sqrt{}$Count. Additional research is needed to secure a body of data that will allow the establishment of new constants for all

(Continued on page 188)

Our COTTON INDUSTRY Looks Good to England

HIGHLIGHTS: British commission's report following American visit discloses startling differences in efficiency, but this author sees possibility that our prospective export trade will involve us in similar difficulties.

By A. WYN WILLIAMS

THE MASTER has come to sit at the feet of his pupil. Lancashire originated the modern methods of textile manufacturing and taught them to the rest of the world, the United States included. Today, however, production methods in America are far ahead of those in England, according to a report recently released by the British-Government-sponsored Platt Commission, which visited American mills last summer.

The products of Great Britain's cotton-textile industry have not been able to stand competition in world markets because of a high level of unit cost. Hence, while Great Britain in 1913 exported 7,075,000,000 yd. of cotton goods, in 1938 (the last pre-war year) she exported only 1,387,000,000 yd.

English textile interests have been apt to be complacent and blame other factors than failure on their own part to march with the times and abandon reactionary practices. They have blamed the drop in British textile exports variously on tariffs or on the establishment of native textile industries in countries that previously had relied on imports. They have explained the progressive loss to Japan of the market in India, vividly illustrated in Table I, by stating that the high standard of living of the British textile worker has prevented him from competing with cheap Asiatic labor.

If, during these 25 years, complacent British textile men had studied the technics of American textile manufacturing they would probably have come to the conclusion that, not only could they not compete against cheap Asiatic labor, but they could not compete against high-priced American labor either.

View in Lancashire weave shed. Only 5% of British looms are automatics.

HIGHER PRODUCTIVITY. The Commission found that the productivity of the American textile worker per man-hour is higher than that of his British counterpart by from 18 to 49% in spinning; 80 to 85% in winding; 77 to 89% in beaming; and 56 to 67% in weaving. It also found that for a given output considerably greater labor forces are required in the British mill. In spinning, British labor requirements exceed the American by approximately 22 to 98%; in winding, 387 to 571%; in beaming, 366 to 786%; and in weaving, 129 to 203%.

In Great Britain, there is little inducement for management to install modern machinery that would increase the productivity of labor because any speed-up in output would be canceled by the insistence of the powerful trade unions on restrictive practices. Also, any gain would soon disappear through union demands that the additional profits should be reflected in higher and ever higher wages.

Indeed, the wage structure itself of the Lancashire mills is a challenge to progress. It is based chiefly on piece work, and into its composition enter many components representing, over the years, an infinity of concessions to trade-union demands which do not necessarily bear any relation to output.

It is therefore little wonder that the British textile plant is hopelessly antiquated. There are, for example, few automatic looms in use. The percentage is 5% in British mills against 95% in American. Actually 42% of the looms and preparatory plant used in weaving mills was installed before the turn of the century. See Table II, from a survey by the Association for "Political and Economic Planning" in 1930.

The capital that would have made the modernization of equipment possible in the Lancashire mills has been frightened away, not only by the attitude of trade unions, with their "featherbedding" practices and their insistence on ever higher wages and ever shorter hours, but also by the government's tax policies, which give no encouragement to venture capital.

MUST ACCEPT MACHINE. The lesson is gradually being learned in Britain that the high wages of the American worker are justified by higher productivity and that the basis of this productivity is the worker's willingness to accept the machine as an aid to the maintenance of his well-being, rather

Table I—How Britain Lost to Japan in India

Percentages of total quantities of Indian imports of piece goods.

	1913–14	1920–30	1934–35	1935–36	1936–37	1937–38
From Britain	97.1	65.7	58.5	46.4	43.7	45.1
From Japan	0.3	29.9	39.6	52.4	54.6	52.2

Table II—British Cotton Machinery Is Antiquated

Machines in spinning and weaving mills by date of manufacture

	1860–80 %	1880–90 %	1890–00 %	1900–10 %	1910–20 %	1920–30 %
Openers	1.4	5.4	15.0	33.0	23.9	21.3
Cards	0.8	6.4	24.1	37.8	19.9	11.0
Draw Frames	2.2	10.9	22.0	30.0	27.5	7.4
Combers	....	....	....	6.3	43.5	50.2
Fly Frames	4.9	15.0	20.4	30.3	21.5	7.9
Mules	1.9	17.7	17.1	40.8	18.7	3.8
Ring Frames	....	5.5	18.5	37.7	25.4	12.9
Preparatory	4.5	7.8	8.1	15.7	34.7	29.2
Looms	12.7	14.0	15.0	26.8	26.0	5.5

than as a hindrance. On this point the report of the British Commission is very explicit. It states: "Great changes which have been made in the American cotton industry in the relatively short period . . . result in the main from the large-scale mechanization of its equipment and from scientific work assignment. . . . During this 38-year period, the U. S. cotton industry nearly quadrupled its payrolls as well as the value of its products while increasing its labor force about 40%. The increased output per worker thus accomplished was largely due to the development of more automatic machinery and more efficient methods, as the working week has been gradually reduced since 1900 from an average of about 60 hr. to 40 hr. . . . during the period cited labor productivity in Britain has shown little change."

In announcing last spring its postwar plans for maintaining steady employment, the British Government warned: "Increases in the general level of wage rates must be related to increased efficiency and effort."

It can be imagined what reductions in the cost of the finished goods would result if the British weaver tended 32 to 60 looms, instead of only four to six, as at present. Similar economies in cost are possible along the whole line of production, and they are the only hope for Britain's bid for world export textile markets.

COTTON BOARD PLANS. The revelations made by the Platt Commission about the inefficiency of the British cotton-textile industry compared with the American will, undoubtedly, give a new turn to Lancashire's postwar plans. A year ago the Cotton Board, the semi-governmental body that controls the activities and dictates the policies of the industry since the war, advocated plans which leaned heavily toward permanent state control of the industry and which specifically recommended statutory control of selling prices.

For re-equipment the Board contemplated the expenditure of only £43,000,000 ($120,000,000) in the five years following the end of the war in Europe. At the time, the editor of TEXTILE WORLD, in his April issue, commented unfavorably on the Board's plans. Dr. Dalton, president of the British Board of Trade (corresponding to the U. S. Secretary of Commerce) seems to have been of the same mind about them.

Almost simultaneously with the publication of the Platt Commission's report, and undoubtedly as a result of of study of it prior to publication, Dr. Dalton flatly rejected the statutory price control and recommended that the industry instead concentrate its energies forthwith on setting its house in order.

He urged the industry to take five immediate steps: (1) bring about amalgamations in order to secure efficient and strong units financially; (2) undertake the necessary re-equipment; (3) overhaul the merchandizing organization; (4) modernize and simplify the wage structure; (5) extend double-shift operation. The English practice is to work only one shift of 48 hr., with the result that, under the American practice of three shifts, American machinery works 96 hr. more than English.

EXPORTS VS. MASS OUTPUT. It is, of course, only fair to point out that the conditions under which the English textile industry operated in the past were not quite so favorable to mass production as were the conditions prevalent in the United States. The American industry in general catered to a uniform market with uniform tastes, so that long runs could be made and machinery for mass wholesale selling perfected. America's domestic market absorbed 95% of American textile production.

Britain, on the other hand, had a domestic market that at one time absorbed only 20% of her production, and even now absorbs only 50%. Her other production had to meet the varied requirements of foreign markets from Iceland in the Arctic to darkest Africa in the Tropics. Each of these markets had specialized demands, which often called for only a limited output and short runs for the particular class of goods favored. These are factors American textile men will have to consider if they mean to enter the foreign markets in earnest after the war.

It must never be forgotten that the English industry at one time was the envy of the world and that it lost its leadership when it allowed the restrictionist practices of trade unions and the lack of imagination of management to interfere with the modernization of its technic. The challenge to efficiency from unionization is still to come to the American textile industry.

PAD-STEAM DYEING
Reaches Volume Production

HIGHLIGHTS: Considerable yardage has been run at Union Bleachery. Existing continuous machine rebuilt for new method. Advantages are indicated.

By C. NORRIS RABOLD
Consulting Editor, TEXTILE WORLD

APPROXIMATELY A YEAR AGO, experiments on the pad-reduced, steam, and soda-ash booster method of dyeing vat colors continuously were begun at Union Bleachery, Greenville, S. C. At that time, the originators* of this method of dyeing were convinced, from the results of considerable laboratory work as well as a few trials in other plants, that the idea was sound.

Officials at Union saw the possibilities offered; and, accordingly, plans were made to adapt to the new method a conventional continuous-dyeing range already installed.

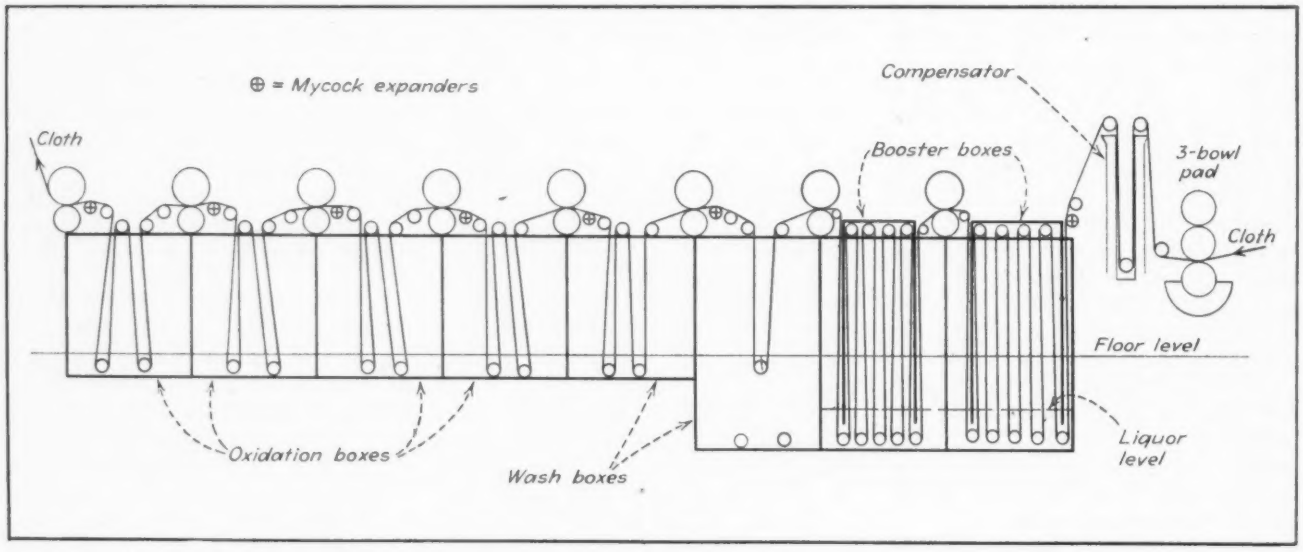
PROCEDURES COMPARED. As is well-known, vat colors up to this time were generally applied to piece-goods by either the pigment-pad and jig-reduced procedure (an intermittent batch operation), or by the pad-reduced and caustic-soda- and sodium-hydrosulphite-booster continuous method. The purpose of both the jig and the booster is to maintain the color in a soluble state in an aqueous medium, so that it may affix itself to the cloth. Up until a relatively few years ago, medium and heavy shades of vat colors were dyed by most plants exclusively on jigs, while only the lighter pastel shades were run continuously. The principal reason for this was the size of the continuous unit. The boxes containing the caustic and hydro were not of sufficient size for the color to dye on properly, thus resulting in poor fastness. Also when color concentrations passed limits of 2 or 3 oz. per gal., there was so much dyeing-on and washing-off in the boosters that it was difficult to control shading and still get depth with economical amounts of dyestuffs.

The advantages of dyeing goods continuously, especially when larger runs were involved, were so obvious that machines with larger booster boxes were built to permit longer dyeing time in the caustic and hydro bath. This trend to larger and larger machines continued until today machines have 3,000- or 4,000-gal. boosters. On these it is possible to run medium to heavy shades, but the chemical cost of charging and maintaining the boosters is so high that long runs of one shade are necessary for economical operation. Thus, it is evident that the further development of bigger machines, with bigger boosters, would probably be unsound.

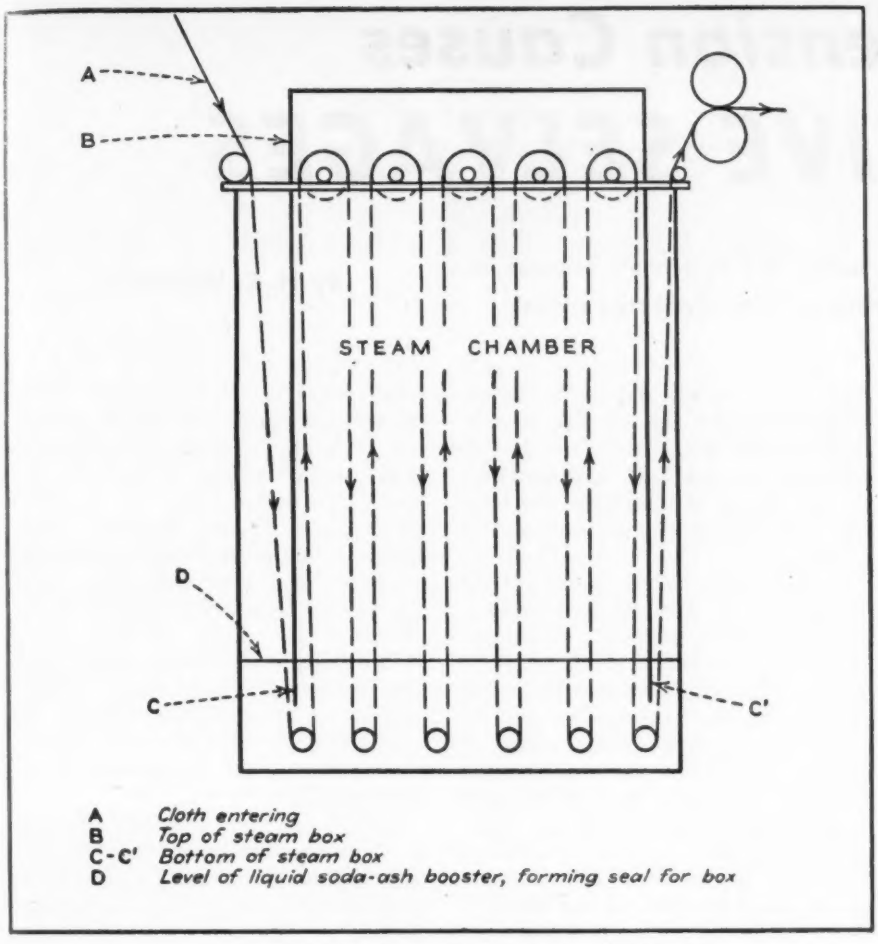
It has long been known that vat colors will develop quite rapidly at high temperatures; but the problem till now, never satisfactorily solved, has been to maintain a sufficient state of reduction in open jigs or boosters, since sodium hydrosulfite in the presence of air breaks down very rapidly at elevated temperatures. Even if reduction could be held, the chemical cost would be quite high, if not prohibitive.

The steam soda-ash booster affords one of the first practical means of overcoming this difficulty. It is a sealed box which has the majority of the space inside filled with steam. The bottom contains only enough water to cover the bottom immersion rolls and, at the same time, serves as a seal on the inlet and outlet ends. In the water is dissolved the necessary amounts of soda-ash and hydro to hold the pad-reduced color in a continued state of reduction. Soda-ash, being a much milder alkali than caustic soda, does not promote bleeding or washing-off of dyestuffs. Thus, a booster of this type can be run for hours with little contamination.

* Organic Chemicals Department, E. I. duPont de Nemours and Co., is the developer of the pad-steam continuous dyeing process. Its technicians worked in close cooperation with Union Bleachery



Side view of entire continuous machine set up for the steam, soda-ash booster method of dyeing.



Liquid seals off the steam chamber of the booster box.

REBUILD MACHINE. In order to experiment with the steam, soda-ash booster, Union Bleachery officials decided to take the existing 8-box continuous machine and rebuild the first three boxes for the steam method. These boxes had a combined capacity of approximately 2,100 gal. when used as caustic and hydro boosters. Generally speaking, in a conventional booster the longer the reduced color is in contact with the cloth, the heavier is the shade, and the better the fastness. Thus, many immersion and sky-rolls were already located in each box. Later on, it was found that by the new method the third booster was unnecessary; and good fastness and uniformity of shade could be obtained without its use.

Since this method was untried and the plant was anxious to get started working with it, the enclosures for the booster boxes to form the steam chambers were made out of sheet-rock with angle-iron at the joints, fastened together with stove bolts. One for each box was assembled in the machine shop and set into the boxes.

Locating these steam chambers was very much like slipping a box with one open bottom down into another one with an open top. As the top rolls on the permanent boxes were mounted in outside bearings, it was necessary to fit the new boxes closely around the shafts to prevent steam leakage. A sight-level, coming out from the side of each box at the bottom, controlled the level of the soda-ash booster. The depth of each booster was maintained at a level of 24 to 26 in. The first two boxes contain around 270 gal. of solution, not allowing for roll displacements, while the third contained about 100 gal. less. A closed coil in the bottom of each box provided the source of heat for the liquid boosters, while two perforated steam pipes at the top of the boxes furnished steam. Low pressure steam was used in both lines at first.

O.D. SHADE TRIED. Experiments were begun on a medium-heavy shade of O.D. These trials indicated the necessity of driving the top rolls on each box in order to minimize tensions. This was accomplished by mounting sprockets on the shafts of each top roll and end of the bottom nip rolls on each box. An endless chain pulled the top rolls in synchronization with the driven nip rolls. The experiments also demonstrated the desirability of using high-pressure steam in both the open and closed lines, as it was difficult to maintain temperatures of 212° F. or better with low pressure. However, results obtained were eminently satisfactory from both fastness of shade and economy as compared to pad-jig work. It was also found that the third booster was unnecessary; satisfactory development of shade and good fastness were obtained in two of the three boosters.

Production was begun on an O.D. government shade while titration controls on the soda-ash boosters were worked out for alkalinity and hydro concentrations. Results obtained on the first several hundred-thousand yards were so satisfactory from the standpoint of shade, fastness, and cost that iron boxes were constructed to replace the temporary ones made from sheet-rock. At the same time, high-pressure steam was introduced in both the open and closed coils in order to maintain the higher and more uniform temperatures.

The machine operates at 60 to 80 yd. per min. with approximately 30 to 40 sec. booster time, as against previous speeds of 50 to 60 yd. per min. with an conventional booster. Boosters contain a total volume of 500 to 600 gal. as compared to 2,000 to 2,200 gal. when operating with caustic soda and hydro. It is unnecessary to charge the boosters with color to allow for the initial shade drop at the start of a run, since there is very little wash-off in the soda-ash booster. The full effectiveness of the hydro is attained for reduction, since there is no air present to decompose it.

Millions of yards of cloth have been dyed by this method, from the time the procedure was worked out last spring. Most of the goods and shades were intended for use by our armed forces, but a number of lots were run most satisfactorily in commercial shades.

The experience of Union Bleachery indicates the steam soda-ash booster method possesses the following desirable features:

1. Small liquor volume and low chemical cost.
2. Boosters can be controlled by quantitative chemical titration.
3. Shade fastness equal to methods now in use.
4. Satisfactory uniformity of shade.
5. Cost equal to or slightly lower than either the pad-jig or conventional booster methods of dyeing.
6. Changes can be made quickly from one shade to another without tedious and expensive cleaning of equipment.

Improper Tension Causes DEFECTIVE SELVAGES

HIGHLIGHTS: Tight, loose, raggy, loopy, and buttonhole selvages are serious defects. Weaver can prevent many of them. Synthetics critical.

By H. E. WENRICH

SOME OF THE IMPERFECTIONS which occur along the selvages in most weaves are often less damaging to the goods than certain defects taking place within the selvages. Comparing this assertion with actual examples, it becomes apparent that a large float inside the selvage may cover an inch or so of space; but a tight or loose selvage may run for yards. In actual examination of piece goods, the float or other inside-selvage defect may pass down unnoticed; but either a tight or a loose selvage will usually draw attention instantly, especially on finished goods.

TIGHT SELVAGES. Tight selvages are not always detected on the loom, as in some instances the selvage has a gradual drag that passes detection until it has become really taut. And even under extreme drag the imperfection often passes down under the loom inspector's eyes, for the simple reason that the inspector may be making a round looking for something else. This drag can cause a full piece and the start of the following piece to be woven with a tight selvage.

Under some conditions when using certain types of yarns, selvage ends will soon break out when too much drag takes place. But usually on stronger yarns, the tight ends will continue weaving without causing end breakage; and the condition is not noticed until the damaged piece has been inspected in the cloth room. It is too late then to correct the woven piece, but not too late to notify the loom inspector or weave room foreman to make an immediate check-up on the loom to correct the trouble in order to avoid a future "second."

During inspection, tight selvages when passing through rollers on the cloth-room examining machine will have a taut appearance and will leave the cloth baggy between selvages. When wound on the piece roller or shipping tube, the selvages will form a firm structure; whereas, the cloth between selvages will usually be loosely rolled.

On the loom, tight selvages can be detected by touch and sight. Drumming the finger tips on the selvages between the breast beam and temple will disclose tightness, and watching the movement of selvages at the beating-in of the pick will show a taut condition.

At beating-in of the pick, a tight selvage will not draw towards the reed as theory would indicate. The opposite is an actuality. If the drag is really severe, the woven part of the selvage past the beat-up line will be about six or more picks further in toward the temple or breast-beam than the cloth beat-up line between selvages. Occasionally on certain types of weaves, the foregoing condition will create puckers inside the selvage within the warp body of the cloth.

LOOSE SELVAGES. On loose selvages, the beat-up line within the selvage extends towards the reed—just the opposite of tight selvages. At times, a loose selvage will move towards the reed after each beating-in of the pick for a distance of $\frac{1}{4}$ in. or more. After passing through the temples, a pronounced pucker within the selvage is readily noticed.

There is no method for correcting a loose selvage after it is woven. On the inspecting machine, the cloth will have a firm appearance; whereas, the selvages will have a blistering, sagging effect which is much more unsightly than a tight selvage.

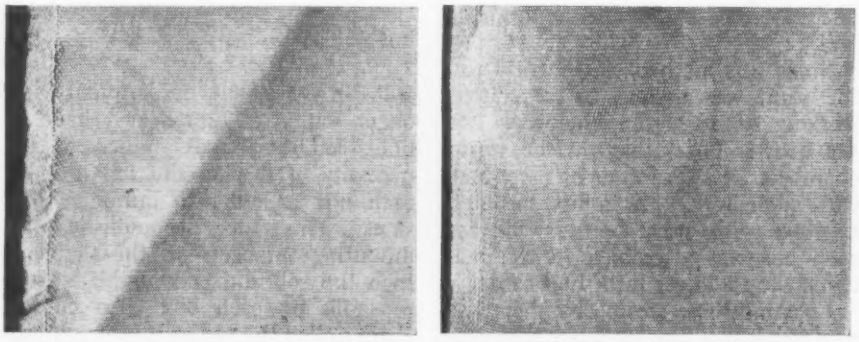
More loom trouble due to breaking ends within the selvage and warp ends just inside the selvages is encountered when selvages are loose than when selvages are tight. The reason is obvious. During weaving, loose-selvage ends "swish" around in back of the reed. This action binds the yarn together, and passing shuttles either chafe or cut the ends that are sticking together. Also, loose ends often catch into shuttle tensions which snap them off.

The remedy for loose selvages is to add bobbin weights where selvage bobbins are used. If the selvages are woven directly from the warp beam, harness adjustment and temple checking is required.

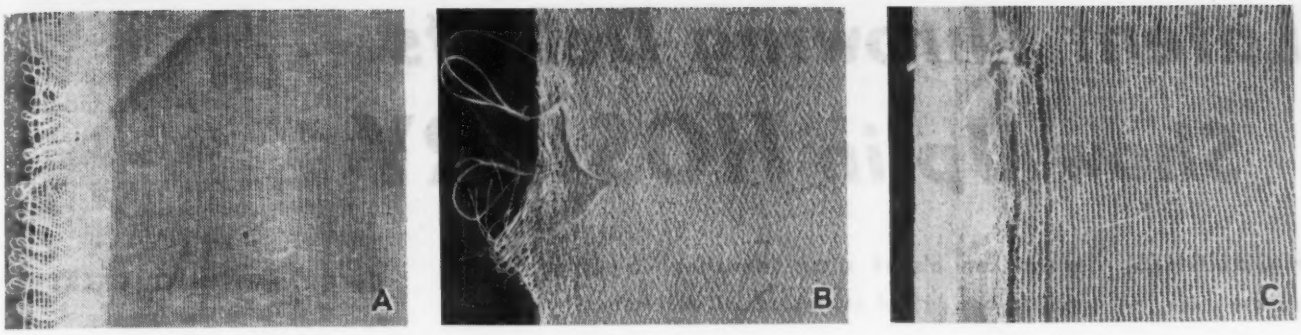
Selvage shafts are generally adjusted to shed slightly lower than regular body shafts. Difference should be approximately $\frac{1}{16}$ in. to $\frac{1}{4}$ in. according to weave and warp yarn. On leno weaves, a difference of $\frac{1}{4}$ in. is suitable; whereas, on tabby weaves, $\frac{1}{16}$ in. or no difference is more commonly desired.

A difference in body and selvage weave will also occasionally create selvage trouble. Weaving a satin from body yarn and using a tabby selvage will often cause a tight selvage on the loom and a loose selvage off the loom. In this instance, a grosgrain weave is more desirable; and, when strong yarn is used in the weave, a selvage with the same satin draw will be an improvement. The same is true on twill weaves. A heavy twill cloth with opposite-twill weave on edges gives an added attractiveness to the cloth.

Due to uneven take-up between body and selvage, it is usually better to weave selvages off bobbins than off



Loose selvage (left) and tight selvage (right) are generally difficult to detect on the loom.



A. Loopy selvage. B. Raggy selvage, probably caused by a drag-in. C. Selvage defect caused by loose body yarn. Note gathering of ends.

the warp. Selvage tension can be controlled better, and less trouble from other imperfections results. And when tight selvages show, weight can be removed until the correct drag is obtained.

BUTTONHOLE SELVAGE. An odd defect occurring at times is the buttonhole selvage, an imperfection running warpwise inside the selvage. One of the most frequent causes of this defect is the irregularity of the wind and individual-end tension on the bobbin. For instance, suppose that on an 80-end bobbin, due to uneven wind, the outer ends of the band become slackened and continue in this manner from the start to completion of the bobbin. This builds up half of the band in a higher body; and, as the ends are woven off, they become loose. If the section of the band is inside, a puckering condition exists. Some of these loose ends fly inwards into the warp proper and create a baggy pocket about the size of a buttonhole. The defect repeats for the full cut length approximately every ½ in. or more. When unevenly built bobbins are noticed, use them on the side where the loose ends will be placed on the outside edge of the selvage.

Another cause for buttonholes can often be traced to worn temple rollers. When the pick beats in, the cloth is beaten towards the temple head; and, as the reed moves away from the beat-up, the cloth slips back toward the reed. This beat-up and slip may be but a few picks and can be noticed readily. Temples must be adjusted to hold the cloth out to full reed width if possible. On most weaves, this can be done either by setting heads properly or by placing in new or reconditioned rollers.

However, if shuttle tensions are too strong, filling yarns may pull in the cloth and create the buttonhole defect. Springs should be adjusted to give a smooth, even pull according to the yarn. Tension fur, pads, or bristles must be placed to allow the yarn to flow smoothly. If filling-yarn drag is excessive after the beat-up and when passing through the temple rollers, the yarn may break inside the selvages. And occasionally, if the filling yarn fails to break, it will usually pull apart during tentering.

Another reason for dragging filling yarns is warped bobbins. Where shuttle changers and bobbin changers are used in the same weave shed, it is not unusual to have the same type bobbin for both. On automatic bobbin winders, nylon, plastic yarns, high-tenacity rayons, and other strong filling yarns often squeeze the barrel tightly and warp the bobbin. When placed in the shuttle, a warped-bobbin tip may press the fur or bristles on one side; whereas, on the opposite side contact with tension is lost. Or, if the warped tip is pointed downwards, the filling yarn may ride against the race plate or shuttle bottom. If the tip warps upward, the yarn is too high above the tension plates; and the result is uneven drag. This drag may pull the selvages; and then during the time the filling yarn comes off the bobbin correctly, the cloth widens out. Finally, the tightly stretched spaces along the selvages cause buttonholes.

When tight selvages are encountered and warp-body tension is too loose, buttonholes are a common occurrence. If slack ends appear inside the selvages, additional warp weight must be added. Strong yarns fail to break clean and often have a collection of chafed filaments along the selvages when loose warp tension prevails; this creates many buttonhole imperfections. Such a condition will continue until added warp tension draws the loose ends tighter, and the chafed spots are woven through. Knots can also form the same imperfections.

LOOPY SELVAGES. On some cloth constructions, loopy selvages are desirable; but, on the usual run of rayon weaves, a loopy selvage may often cause a reject. On fabrics to be coated, loopy edges are detrimental to the coating process and often cost more to finish properly. This form of defect is rarely attributed to filling yarns but can be traced directly to the loom. Loose shuttle tension will occasionally cause the defect.

Most loopy edges are due to too much pick, insufficient shuttle check, or improperly timed harness. If the outside edges of selvages show many loops, notice if the shuttle is rebounding in the opposite shuttle box. Try to avoid adding on more box swell or binder tension; rather, place on more check. If the loops still exist, try raising the power strap on the pick stick to remove pick on the side where the loops show. If the loom bangs off, it may be necessary to move the power strap to its original position and then add binder tension on the opposite side from the loopy edge. If loops still exist, inspect the selvage entry on the outside. Occasionally, an outside end may be entered incorrectly and cause the defect. If trouble still exists, time the harness shedding to close slightly before front center.

Filling pull-ins and filling-yarn snarls are often classified as loopy edges. These two defects really come within the category of ragged edges, although filling snarls often leave a loopy-edge effect.

RAGGED SELVAGES. Jerked-in filling, snarling onto obstructions within the shuttle boxes, often leave a ragged appearance from the woven-in strands of yarn. If a long pull-in takes place, the excess filling yarn is often caught on subsequent picks and jerked into the weave. This leaves numerous ragged strands along the edge. Even though the protruding strands may be clipped off on the picker, a ragged effect still exists. During picking, it is also natural to pull out the extra strands of filling woven into the edge, an action which leaves short lengths of wide cracks that show up plainly. Of the two evils, it may be better to pull out the strands and brush the separated picks together than to allow the pull-ins to remain.

Latent Throwing Defects Show Up in HOSIERY

HIGHLIGHTS: Tension can distort stitch formation. Steaming relaxes viscose more than other rayons. Heat affects dyeing and luster.

By DR. EDWIN C. DREBY*

THE THROWSTER is confronted with a host of problems in the preparation of rayon yarn suitable for making first-quality hosiery. There are some undesirable effects that he may introduce very easily, because of the sensitive nature of rayon yarns to certain types of handling.

It is the purpose of this paper to describe the behavior of rayon yarn under tension and during steaming and to discuss the nature of the undesirable effects that may be produced by improper handling of the yarns with respect to tension and steaming. The yarns used for the work were a 75-den. 24-fil. acetate, a 75-den. 18-fil. viscose, and a 75-den. 60-fil. cuprammonium rayon. Each yarn was used in its raw state without the benefit of sizes or oils.

TENSION. A stocking knit from a sample of viscose yarn that had been subjected to tension in the skein form while wet and kept under tension until partially dry presented a very poor appearance because of shortened loops and consequent variations in the reflecting surface throughout. In this instance, the variation occurred at regular intervals so that a striated effect was obtained. The effect may take other forms, however, depending upon the extent or regularity of the elongated areas; it may give rise to "tiger stripes" or just an overall irregularity.

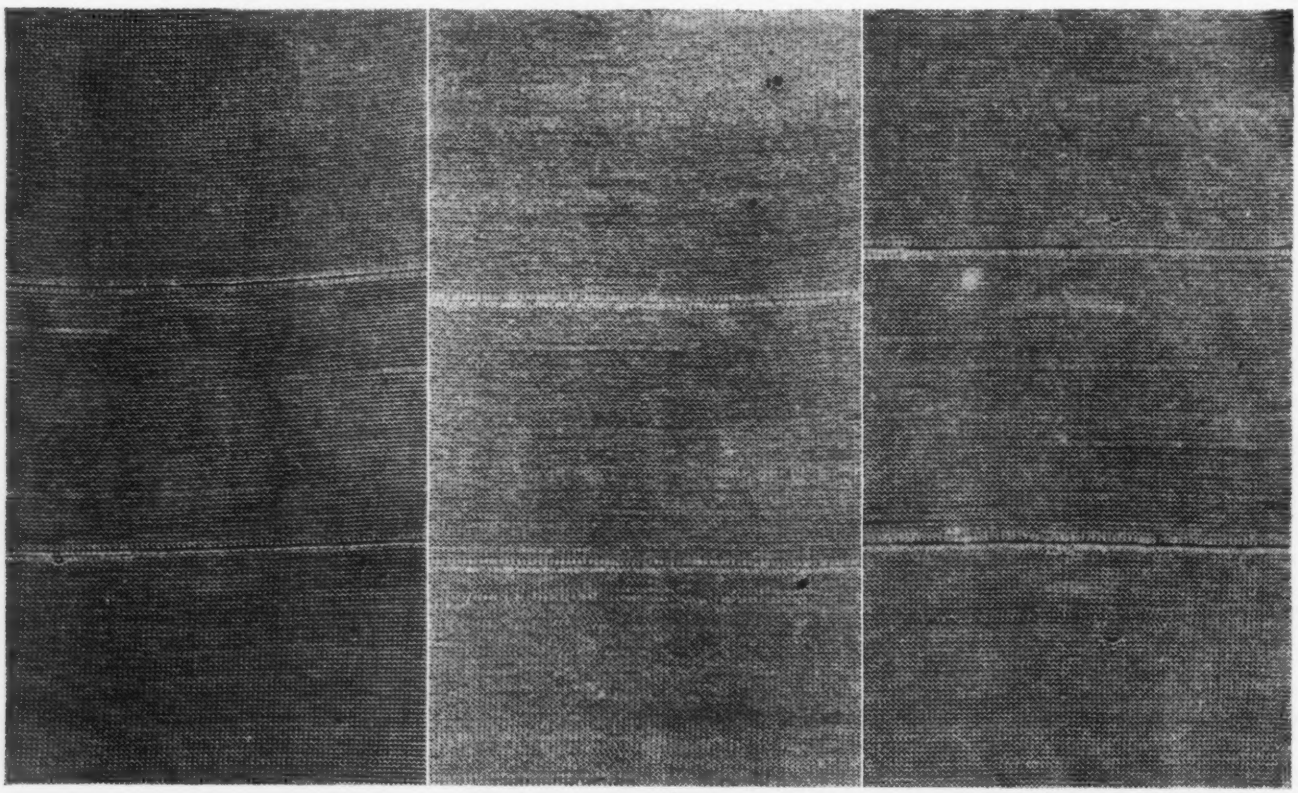
In order to understand in just what throwing operations such effects might be produced, it is necessary to examine the stress-strain diagrams of the yarns. All the tensile tests shown, except those for wet yarns, were made on yarns that had been conditioned for at least 2 hr. in an atmosphere containing 65% r.h. at 70° F.

In examining the curves for the original yarn tested dry and wet, the following elongations are observed for each of the yarns under 10-gram and 30-gram tensions.

	10-Gram Tension		*30-Gram Tension*	
	Dry	*Wet*	*Dry*	*Wet*
Viscose	¼%	8 %	¾%	14½%
Cupra.	¼%	6½%	¾%	10½%
Acetate	¼%	1½%	1¼%	6½%

Tensions of 30 grams are not uncommon during reeling, winding, etc.; and, while much less frequently, even much higher tensions occur. The conditions that produce permanent set must be avoided. Dirty or worn guides and tension devices, non-free-running

* Abstract of paper prepared by the Philadelphia Section of the American Association of Textile Chemists and Colorists.



VISCOSE **CUPRAMMONIUM** **ACETATE**

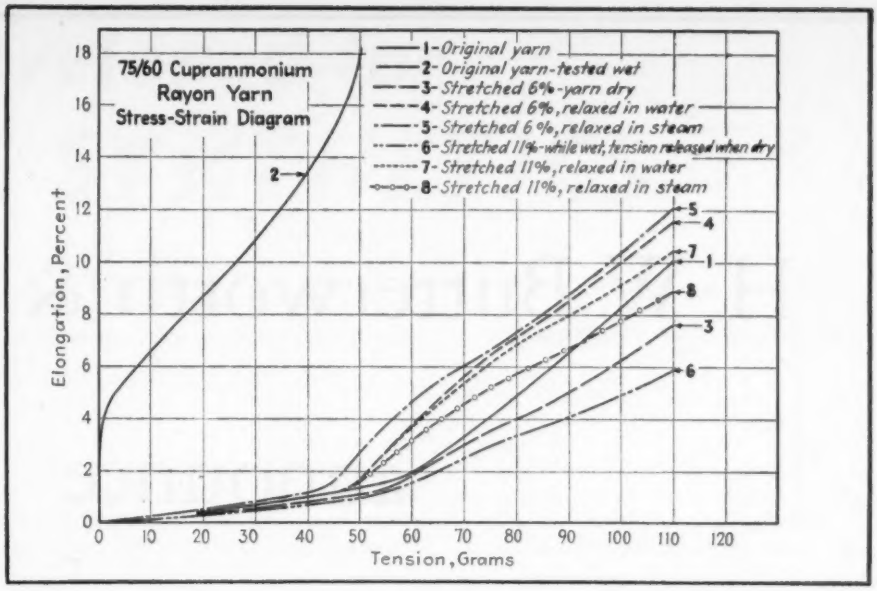
Top portion shows normal yarn; center, stretched; bottom, stretched and steamed. Note that steaming tends to minimize irregularities.

spools or packages, non-uniform yarns such as are caused by snapping out of a skein that is still damp around the tie bands—to mention a few of the conditions—may lead to excessive local elongations that are dangerous.

If these local elongations are not removed before knitting, the yarn contracts on scouring and dyeing; and a series of shortened loops result to cause a "stripe" in the fabric. Or, if the local elongations are produced before "twisting," subsequent wet processing shortens the yarn, increases the turns per inch, and results in non-uniformity of twist.

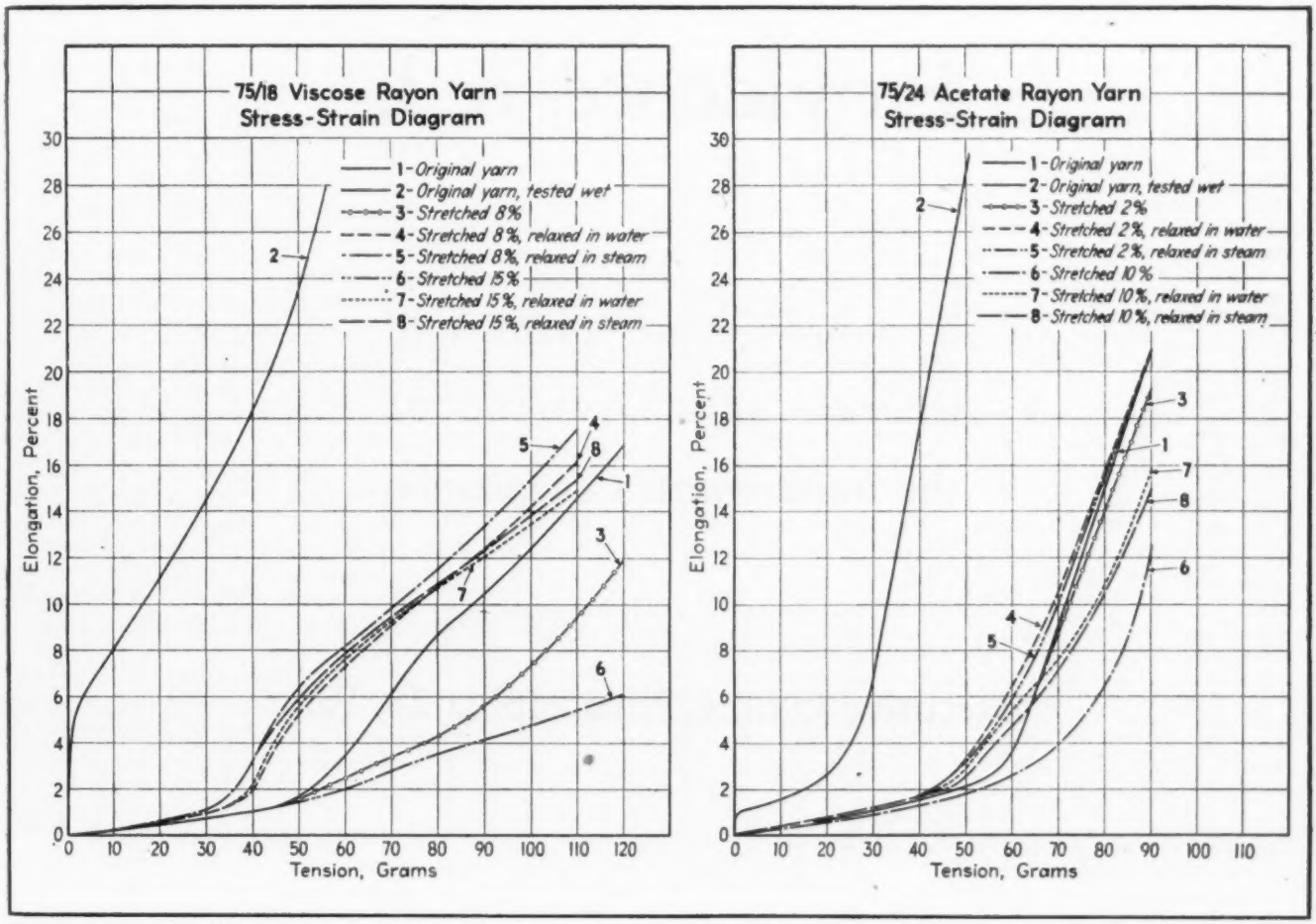
EFFECT OF STEAMING. Either water or steam seems to relax a viscose yarn completely, regardless of the amount of stretch it has received. Cuprammonium and acetate yarns seem to be completely relaxed only when the amount of stretch is relatively low. If a stretched yarn had no tendency to relax under these conditions, the stripe effect produced by shortened loops would not occur. Hence, viscose yarns are most susceptible to irregularities of this nature, for they are most easily relaxed; whereas cuprammonium and acetate yarns will show the effect the least, for they are least readily relaxed. In addition, water and steam have about the same degree of relaxation on viscose and acetate yarns; whereas water has greater relaxing power than steam on cuprammonium yarn. Thus, a stretched cuprammonium yarn which has been steamed and then knit will still show a stripe effect after dyeing; whereas viscose and acetate yarns show this effect to only a slight extent.

These variations are illustrated by the photographs.


75/60 Cuprammonium Rayon Yarn Stress-Strain Diagram
1-Original yarn
2-Original yarn-tested wet
3-Stretched 6%-yarn dry
4-Stretched 6%, relaxed in water
5-Stretched 6%, relaxed in steam
6-Stretched 11%-while wet, tension released when dry
7-Stretched 11%, relaxed in water
8-Stretched 11%, relaxed in steam
Elongation, Percent
Tension, Grams

While steaming is at the disposal of the throwster for setting twist, it also serves to remove any irregularities that may have been unavoidably introduced previous to that operation. However, steaming itself can introduce variations.

Increasing either the time or temperature or both of steaming causes all of the yarns to have less affinity for the customary dyes and also gives the yarn a duller appearance.



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Technics Developed for DYEING SYNTHETICS

HIGHLIGHTS: Inhibitors forestall gas fading of acetates. Padding chrome colors new method for nylon. Caustic solutions must be avoided with Aralac. Cross-dyeing possible with Aralac blends. Stretched yarns hard to dye.

By ARTHUR W. ETCHELLS

IN MAKING A SURVEY of the problems encountered in the dyeing of the synthetic fibers, it is difficult to make a choice of those which are of the greatest importance, for, unlike the natural fibers which have been known and experimented with for many centuries, the synthetic fibers are new—new in structure, new in their chemical composition, and capable of almost infinite changes. Thus the viscose rayons which we know today are very different from the wood-silk of but a comparatively few years ago, and the chances are that the nylon, Vinyon, rayon, and Aralac which are produced today may in a very few years, or even months, be so improved as to be unrecognizable by anyone who does not closely follow their day-by-day development.

Any changes made in the manufacturing of yarns generally show themselves in a changed affinity for dyes; thus, when viscose rayon is stretched while in a plastic state to produce highly oriented strong yarns, the affinity for direct colors is very greatly decreased.

ACETATE. A problem which for many years has been attracting the attention of everyone concerned with the processing of synthetic fibers is that of atmospheric fading of blue and violet acetate dyes, which manifests itself by a change of color of the blue or violet dyes to a very reddish tone. It gradually destroys the original color entirely because of oxides of nitrogen in the air. However, the tendency of these colors to fade can be partly overcome by using finishes which are mostly alkaline organic amino or other nitrogen compounds and which act by absorbing and neutralizing the atmospheric gases which cause the fading of the amino-anthraquimone dyes. (It is to this group that the blue and violet acetate colors belong.)

The effectiveness of these inhibitors is gradually destroyed at a rate dependent upon the amount of acid-nitrogenous gases to which they are exposed. When the inhibitor is completely saturated with those destructive gases, then the gases are free to act upon the color and eventually destroy it. Washing or dry cleaning completely removes the inhibitor and, therefore, the protective effect.

There are several azo dyes on the market which show very good resistance to this type of fading; but they, in turn, have other drawbacks which do not permit their use on all types of fabrics.

Efforts to dye acetate fabrics with acid colors possessing greater wash, light, and gas fastness have been mostly unsuccessful due to the difficulties encountered in the processing. All of these processes depend upon the swelling of the acetate fibers by the use of strong solutions of organic materials, notably alcohol and formic acid. The strength of these solutions must be rigidly controlled; if too strong, the fabric will be dissolved; if too weak there will be insufficient swelling and, therefore, no coloration of the fiber. After removing the goods from the swelling bath, they must be very thoroughly washed to remove all traces of the swelling agent which is held very tenaciously by the acetate fiber; or further reaction will take place in the dryer and will result in stiff or boardy fabrics possessing very poor tensile strength.

Acid dyestuffs for use by this method must be carefully selected. Each one must be tested individually as well as in combinations for its ability to be absorbed by the acetate fiber and for its resistance to the various fading influences. Very few colors will be found which possess the requisite fastness properties. The acid anthraquimone blues and violets are nearly as susceptible to gas fading as the regular acetate dyes.

NYLON. Nylon presents another set of problems, practically none of which has been solved satisfactorily. When nylon was first introduced, it was thought, probably because of its chemical resemblance to wool, that it would dye best with acid colors. This, however, has not proven to be true when using conventional dyeing methods, as the acid dyes show a varied affinity for nylon. Depending upon the amount the yarn has been stretched, the greater the elongation of the yarn, the lower the affinity of the acid dyes for the fiber. This applies whether the stretching was done when making the yarn or during subsequent processing, such as uneven tension in winding or weaving. Stretching shows up as light and dark places in the finished goods.

The direct and chrome colors which have an affinity for nylon show practically the same faults; whereas, the dispersed type of acetate dyes are certainly at the present time the best-dyeing group of colors. They are very level dyeing and penetrate well when applied from a soap or synthetic-detergent dye bath. They show very little tendency towards surface dyeing, and what little surface dyeing does appear can be overcome by a slightly longer time in the dye liquor.

Blotchy, uneven, and off-shade dyeings can generally be converted into level, well-penetrated dyeings by a longer dyeing time or by fresh dye liquor with the addition of any needed shading colors to produce a proper match to the sample.

The dispersed acetate dyestuffs show in most cases a distinct difference in tone from the same dyeing on acetate; thus, they make it very difficult to dye

The author, Arthur W. Etchells, who is superintendent of the piece-dyeing division and chief chemist of The Hellwig Dyeing Corp., Philadelphia, is the 1945 chairman of the Philadelphia section of the American Association of Textile Chemists and Colorists.

This article has been abstracted from a paper, just released, which he presented during the annual meeting of the AATCC.

SUNOTEX OILS . . .

Stepped up Production 60% to 32 yds. per minute

This is the story of how a Sun Oil engineer helped a nationally known New England mill to speed up production. The mill was sizing 40 denier Nylon, 117 sley, 78 picks, 4554 ends. But the warp was wet and sticky.

The Sun engineer recommended they try a petroleum product with wetting qualities that enabled it to penetrate to the heart of the fiber, but one which would leave the exterior smooth and with a fine finish.

FABRIC TESTED with Sunotex Oil handled much more easily, and slashing speed was stepped up to 32 yards per minute . . . 60% faster than before. This is a typical example of how Sun engineers are helping to solve processing problems for textile mills in all parts of the country.

ESPECIALLY REFINED to meet the needs of textile mills, Sunotex Oils emulsify easily and permanently, penetrate rapidly into wool, nylon or rayon. They scour out evenly and readily, therefore they do not affect drying. Sun also manufactures a quality line of oils and greases, carefully processed to prevent dripping, splattering or "oil fly." For trouble-free processing—or for clean, efficient lubrication—specify Sun Industrial Products.

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solid shades on acetate and nylon mixtures. This shade change is most pronounced in the range of oranges and reds; in the case of the oranges there is a shift towards the red; thus, a dye which gives a yellowish-orange on acetate will give a scarlet on nylon, and acetate reds yield much bluer shades on nylon than on acetate.

At the present time, the best fastness to light on nylon can be secured with selected acetate dyes; but the fastness to washing leaves much to be desired.

Atmospheric gas fading which affects the blues and violets on acetate has practically no effect on the same dyes on nylon, probably because the fiber itself acts as a protecting agent.

One of the main difficulties encountered in dyeing nylon on the jig is the large temperature difference between the selvage and the center of the goods, amounting to about 50° F. This makes necessary the selection of colors showing good exhaustion over a wide range of temperatures. In the case of a mixture of dyes, the colors selected should exhaust at as near the same rate as possible to avoid shading from selvage to selvage and from end to end of the piece. Covered jigs will help to overcome this difficulty.

Many attempts have been made to color nylon with dyes that will be faster to light and to washing than those available today. Du Pont has developed a new method of applying chrome colors which consists of padding the fabrics with an ammoniacal solution of chromacyl black W, pontachrome orange BL, and pentachrome yellow R and shellac—the shellac acts as a wetting agent for the nylon and a binder for the color. The goods are run, after padding, through a flue dryer without batching; then they are passed through a vat ager at a temperature of 216° F. after which they are worked on a jig with bichromate and acetic acid at the boil. This method gives well-penetrated dyeings, fairly fast to light and very fast to washing at 180°. Although this process is capable of giving excellent results, it requires first-class machinery as well as constant care and supervision throughout the entire process, because goods that are damaged in processing are almost impossible to reclaim.

Courtesy DuPont

Piece-dyed nylon marquisette. Bodice is flesh pink and skirt is black.

VINYON. Not such large quantities of Vinyon have been dyed as of some of the other synthetic fibers; because, for the use to which it is put most often, a dyed fabric is not necessary. Where a colored fabric is required, dyeing presents several unique problems, because of the low fuming point of Vinyon and its almost complete absence of swelling when immersed in water. This makes necessary the use of a swelling agent in the dyebath. Ortho-hydroxy diphenyl is most generally used for this purpose. Dyeing is carried out at 140 or 145° F. for dispersed acetate dyes. The depth of dyeing is controlled by the amount of ortho-hydroxy diphenyl or Dowicide No. 1 which is used. The colors obtained with acetate dyes have very poor light and wash fastness on Vinyon.

Extreme care must be used in handling Vinyon through all the scouring, dyeing, drying, and finishing operations because of its great susceptibility to damage by heat. The fabric will shrink and may be rendered useless if heated to temperatures above 150° F.

VINYON E. Vinyon E, the elastic yarn, dyes very easily with acetate dyes if a sulfated fatty alcohol is used as a dispersing agent. It requires very few special precautions, as it differs from the normal Vinyon in its ability to withstand high temperatures without serious damage. In fact, it may be boiled for several hours in the absence of soap. Sulfonated oils and strong alkalies should also be avoided as much as possible because they remove the elasticizing material.

Combinations of Vinyon E and cotton can be bleached, if needed, with chlorites or hypo-chlorites in a slightly acid bath, or with hydro-sulfites, which seem to have but little effect on the strength or elasticity.

In drying Vinyon E fabrics, dry heat at high temperatures should be avoided as much as possible because the fiber becomes brittle and loses its elasticity due to the evaporation of the elasticizer.

ARALAC. Aralac, which has been produced in large quantities in the United States, will serve as an example of synthetic protein fibers as all seem to have the same general characteristics.

One of the main faults with the synthetic protein fibers is the loss of strength when wet. This loss is great enough to prevent the use of 100% Aralac fabrics for wearing apparel at the present time and necessitates the mixing of cotton or rayon with the

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- ★ Firestone Tire & Rubber Company, Akron, Ohio (merchandised under the name Velon)
- ★ Hodgman Rubber Company, Framingham, Mass.
- ★ Irvington Varnish & Insulator Co., Irvington, N. J.
- ★ National Plastics Products Co., Odenton, Md.
- ★ Visking Corporation, Chicago, Illinois
- ★ Western Felt Works, Chicago, Illinois

DOW
PLASTICS

Aralac to give strength to the finished fabric.

Another difficulty which must be guarded against is its sensitivity to alkalies. It is made harsher and is eventually destroyed by contact with dilute alkali. Even if the damage is halted before total destruction, it is made so brittle that successive dusting occurs in the finished fabric.

Therefore, knowing in advance two of the major faults of this fiber, it is obvious that extra care must be used in all wet operations to avoid permanently injuring the fabric.

All machines should run smoothly and the goods should be handled with as little tension as possible. The alkalinity should not exceed pH 8 and should be lower if at all possible.

Aralac is dyed by most classes of dyes with the exception of some few direct colors which leave it white or nearly white. In fact, one of the greatest difficulties from the dyer's standpoint is the great affinity of Aralac for so many different types of dyes; for, when making dye additions to shade the fibers combined with the Aralac, some of the color is almost certain to stain the Aralac. Even acetate dyes have a fairly good affinity for Aralac. This affinity for acid and direct colors can be to some extent controlled by changing the pH, but the alkaline limit should be under pH 8.

Insofar as the fastness of the colors on Aralac is concerned, acid colors are slightly less fast to light and washing than they are on wool. Acetate colors have very poor fastness to light and washing on Aralac. The direct colors that dye Aralac are slightly less fast to Aralac than to cotton. Vat dyes should be avoided entirely because of the alkali required for this application.

Quite good cross-dye effects leaving Aralac white can be obtained between Aralac and rayon from selected direct colors if the dyebath is kept slightly alkaline with di-sodium phosphate or small amounts of tetra-sodium-pyrophosphate. Of course, the opposite effect can also be obtained by dyeing the Aralac with acid colors in an acid bath with acid colors.

In dyeing combinations of acetate and Aralac, the acetate can be left white by dyeing the Aralac with direct or acid colors which leave acetate white; but good results cannot be obtained if it is specified to dye the acetate and leave the Aralac white. All acetate dyes stain Aralac very deeply, and this stain cannot be removed from the Aralac without at the same time removing the color from the acetate or destroying the Aralac.

Fair whites may be obtained on Aralac combinations by treating with sodium hydrosulfite, then tinting with an acid violet. Hypochlorites destroy the fiber, and peroxides should be avoided. The alkali required to produce effective bleaching leads to a harsh fabric which dusts badly in the finished state.

Aralac is easy to dye, but to get a clear color on blends as shown here requires skill.

FORTISAN AND FIBER B. Fortisan and Fiber B are saponified acetates which have been stretched while still plastic and before saponifying. They are a highly oriented strong yarns with but little elasticity.

They show but very little affinity for most colors. Light shades require about four to six times the amount of dye to produce a given shade that is required by viscose rayon.

Heavy shades of navy and wine are very difficult to obtain with direct colors because of poor affinity for dyes. When attempts are made to load the fiber with dye through the use of large amounts of salt, the finished goods crack badly. Some of the developed colors show fair affinity for these yarns and should be used in dyeing dark colors.

Some vat colors have good dyeing properties on the saponified acetates, but most do not. Trials should be made before setting up a vat-dye formula to dye Fortisan or Fiber B. Acetate colors do not dye either.

Dyeings free from warp streaks or filling bars are difficult to obtain because variations in the amount of stretching during the manufacture cause variations in the amount of dyes absorbed. At times, resist streaks or flashes of white caused by uneven saponification appear. It would be a wise precaution to treat the goods with a strong alkali, such as caustic soda, before dyeing in order to saponify completely the acetate which may remain and to produce a more uniform color in the subsequent dyeing.

Fabrics made of these fibers should not be dyed on a jig nor treated in a wet condition on any machine where there is likely to be warpwise tension; otherwise, the fabric will be weakened so seriously as to render it valueless. This weakening probably is caused by the warp cutting the filling yarns, or it may be caused by exceeding the limit of elongation.

FIBER G. Fiber G is a highly oriented viscose fiber which has very great strength both wet and dry and has a very low shrinkage. Its dyeing properties are similar to those of Fortisan or Fiber B previously mentioned, but it is a true viscose fiber and not a saponified acetate. It is dyed fairly well by a selected group of developed colors. A few vat colors show good affinity; but the majority of direct, developed, and vat colors show poor color value and dark shades tend to crock badly.

Viscose rayons, such as are used for tire cords, show somewhat similar properties to Fibre G and Fortisan; but, as they are not so highly oriented, they are not so difficult to dye. However, they tend to show a streaky appearance, due probably to uneven stretching in manufacture.

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Construction, Fiber, Finish Affect FABRIC WARMTH

HIGHLIGHTS: Other factors influencing warmth are thickness, permeability to air, and effect of laundering. Warmth-testing machine measures heat loss.

By **FREDERICK T. MOSEDALE**
United States Testing Co., Inc.

OF THE INNUMERABLE FEATURES of textile fabrics, one of the major points to consider in garments or bed clothing is still the important factor of warmth. Numerous thermal conductivity tests have disclosed interesting data, not only on the heat-retaining qualities of the fabrics tested, but also on the relative importance of such factors as fabric construction, thickness, weight, fiber composition, and fiber finish.

The apparatus used for testing warmth (see illustration) is known as the guarded hot-plate type. It consists of a center, electrically heated, copper plate which has been finished to have heat-loss characteristics identical with those of the human skin. Guard plates, maintained at the same temperature as the hot-plate, are arranged to prevent extraneous heat losses, while thermostats are provided to control the input energy to the various plates and to operate suitable electrical instruments for measuring the heat that passes through a known area.

Temperature controls are adjusted to hold the plates at the exact temperature of the human skin so that each sample is tested with the inner, warm side under a condition similar to that of actual use. Velocity of outer air, variations in moisture content in the air, and fabric changes resulting from use are also under control and are taken into consideration.

The test data give a direct measure of the heat flowing through the sample under conditions of the test; i.e., the heat in B.t.u. passing through 1 sq. ft. of sample surface area in 1 hr. for each Fahrenheit degree of temperature difference maintained on opposite sides of the specimen is measured. For purposes of interpretation, this quantity is converted into a coefficient which is directly proportional to the heat-retaining ability of the sample. Thus, the larger the coefficient, the greater the warmth-retaining ability of the sample.

Warmth-testing machine developed by U. S. Testing Co. has a plate which simulates heat loss of human skin. Heat in B.t.u. passing through 1 sq. ft. per hr. is measured.

BLANKET TESTS. The majority of data cited in this article is based on results found from testing bed blankets, although considerable work has also been done on dress goods, suitings, overcoatings, comforters, underwear materials, staple fibers, battings, and even pelts.

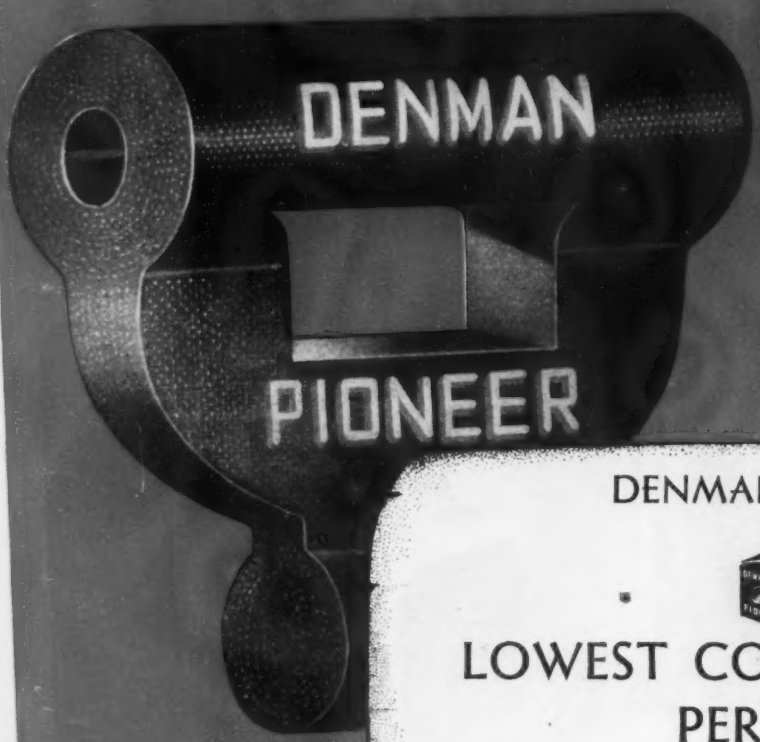
The tests conducted have disclosed many things, but one fact that stands out is that the warmth-retaining ability of a fabric in the original state depends primarily on the specimen's construction, with fiber content and finish being secondary factors. However, a different story is presented after a period of use or a series of cleaning treatments.

Points to be considered in producing an article for maximum warmth retention are: thickness, weight, basic construction, fiber composition, and fiber finish. Since air is a poor conductor of heat and consequently a good insulator, the greater the number of small air pockets present in a fabric, the greater the ability to retain heat. This is accomplished by means of a prominent nap. Increases in the actual number of fibers comprising the nap also tend to improve insulating ability, although the thickness of the finished fabric is the primary factor. Of course, fibers can be raised to varying heights during finishing; but their ability to return to this raised condition after being compressed in use, or after cleaning treatments, must also be taken into consideration.

It is natural to assume that the heaviest blankets would make the best heat insulators, but this is not by any means an entirely true statement. Indeed, certain other factors indicate that in still air the weight of a blanket has very little to do with its warmth-retaining properties. This is illustrated by the results of two tests. A blanket weighing 21 oz. per sq. yd. gave a reading of 1,365; while a second blanket, weighing only 12½ oz. per sq. yd., was found to have a warmth coefficient of

(*Continued on page 186*)

A PICKER IS KNOWN BY ITS RECORD



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SPUN-RAYON SIZING
Governed by Fibers Used

HIGHLIGHTS: Gelatin required in formulas for yarns with high acetate content. Firm, evenly warped section beams required. Positive stretch control at size box is preferred. Large bar reduces tension to break ends apart.

By T. O. OTT, JR.
Southern Editor, TEXTILE WORLD

ANY OF THE STANDARD cotton-yarn slashers can be used for sizing spun-rayon yarns either in 100% form or in blends with other fibers if provision is made for the application of the proper size mixture, if stretch is controlled, and if drying temperatures and moisture regain are kept within safe limits. As one mill man has put it, "Slashing spun rayon is 60% application and 40% formula." The type of fabric being made, the type of finish to be applied, and the characteristics of the fibers to be sized determine the make-up of the formulas and the application of the size.

Warpers and spoolers must be kept in first-class condition with tensions, drop-wires, combs, and drums smooth and free from burrs or grooved surfaces that can cut the yarn. Avoid unequal tension on ends and low or high selvages, as these show up as tight or loose ends in the slasher. On spun-rayon yarns more tension is required on the beam than in the running of cotton, and enough tension should be applied to get a firm beam. Speeds normal to cotton are satisfactory.

SLASHERS. Due to the low wet strength of rayon, it can be stretched excessively at the size box if care is not used. Ball bearings on beam journals help reduce stretch. Some mills use a positively driven stretch-control mechanism at the back of the size box (Fig. 1) which allows them to adjust (by means of change gears) the stretch within desirable limits up to the back squeeze roll. When this mechanism is used, care must be exercised to build section beams firmly and evenly without high and low places; as these will show up as slack or tight ends at the back of the slasher. Between the back and front squeeze rolls, stretch can be minimized by making the back roll $\frac{3}{32}$-in. larger than the front roll. The front squeeze roll and the front delivery roll ratio of speeds must be adjusted through gears in the main drive to control stretch.

Large bust-bars help break the ends loose at the front of the slasher, but they are clumsy and hard to handle, so some mills prefer not to use them. One mill man gets good results by running the yarn over one and under another of two lease rods mounted several inches apart on a double fork (Fig. 2), in the place of the conventional bust bar.

Beams should be run with tension enough to make a firm beam, and warps should come to the loom beam dry and cool. One mill prefers to run the warp a little on the damp side to get a firmer beam, and it gets no ill effects from sticking ends or mildew. This mill especially prefers to run acetate-blend yarns this way to avoid static. Beams that are run damp must not be placed on end, as the warp will pack on the lower end, and the upper end will come away from the beam heads. Care should be exercised in handling rayon beams not to compress the warp against truck supports or other objects.

Excessive stretch on spun-rayon yarn can cause more end-breakage at the loom, a harsh or undesirable hand in the finished fabric, and difficulties in dyeing. It is hard to say just what percent stretch would be excessive, as the stretch desired depends to some extent on the type of fabric and its weaving characteristics. It has been an opinion that stretch should be held to a minimum ($1\frac{1}{2}$%), but this must sometimes be modified to care for other factors in weaving. For example, on twill-type weaves, of which there is a large volume in spun rayon, too little stretch on the slasher allows a large stretch in the warp on the loom, which causes starting marks whenever the loom is stopped and started. One mill man found that he could eliminate these starting marks on fancy goods by running as high as 7% stretch at the slasher, without bad effects as to ends down or finishing. It is necessary that each mill determine the stretch best for its own conditions, for no two mills can expect to get the same results in view of the differences in manufacturing conditions. This also applies to the amount of size used in a warp, as some mills size warps heavily to run in a heavily humidified room and others size lightly for a low humidity in the weave room. So, in the last analysis, the stretch, the size content, and the amount of moisture left in the yarn are factors to be determined by each individual mill.

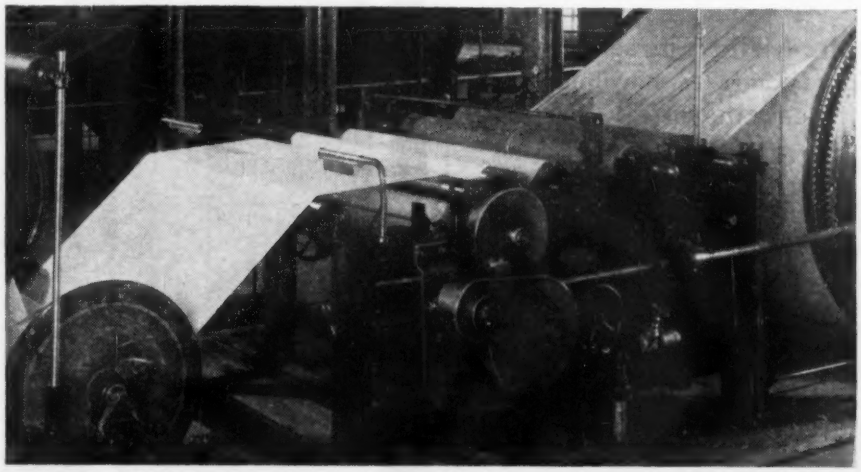
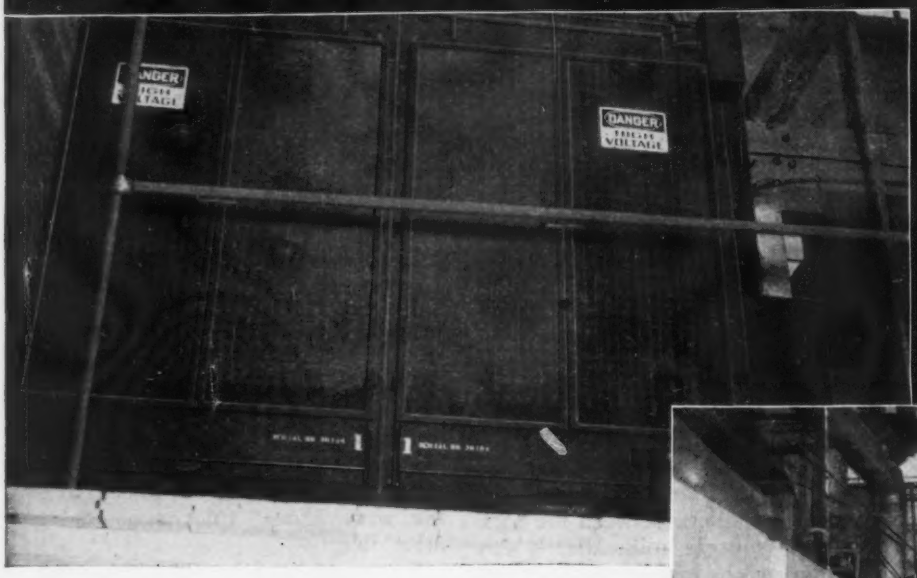
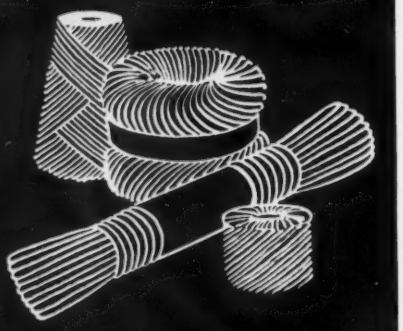


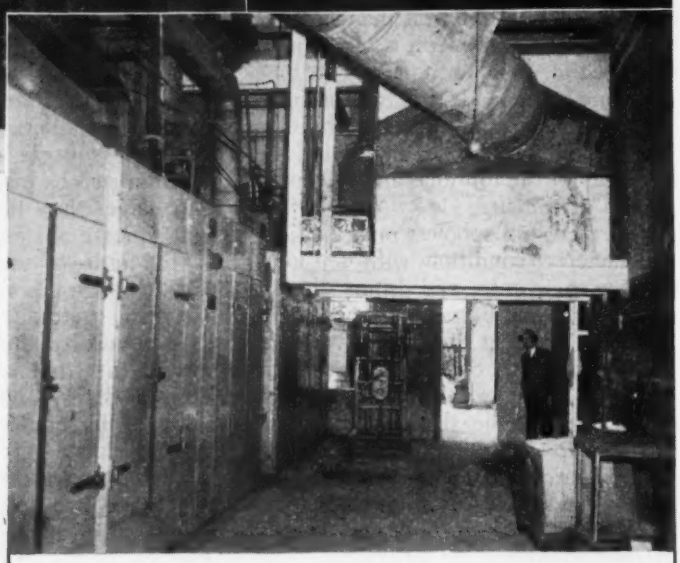
Fig. 1. Stretch-control rolls deliver the yarn positively to the size box of a predetermined speed. The ends are held in contact around 80% of the roll circumference.

SIZE MATERIAL. Many spun-rayon yarns are characterized by a low twist

Better CORDS AND YARNS— WITH ELECTRO-MATIC AIR FILTERS







Two views of the Electro-Matic installation at Bibb Mfg. Co. Upper left, air intake side; above, rear of unit.

Bibb Manufacturing Co., Macon, Ga. eliminates dust, soot and smoke in drying operations

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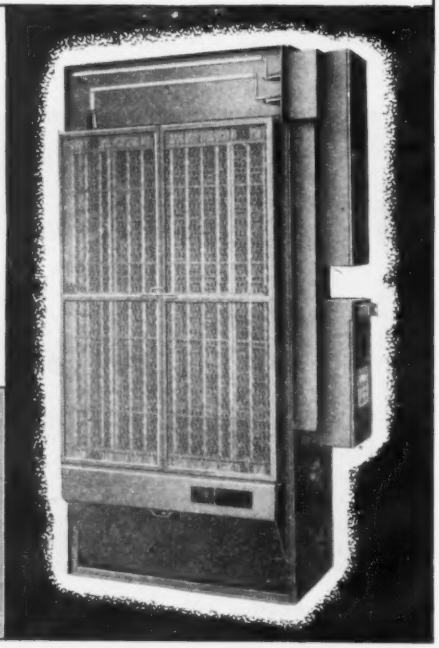


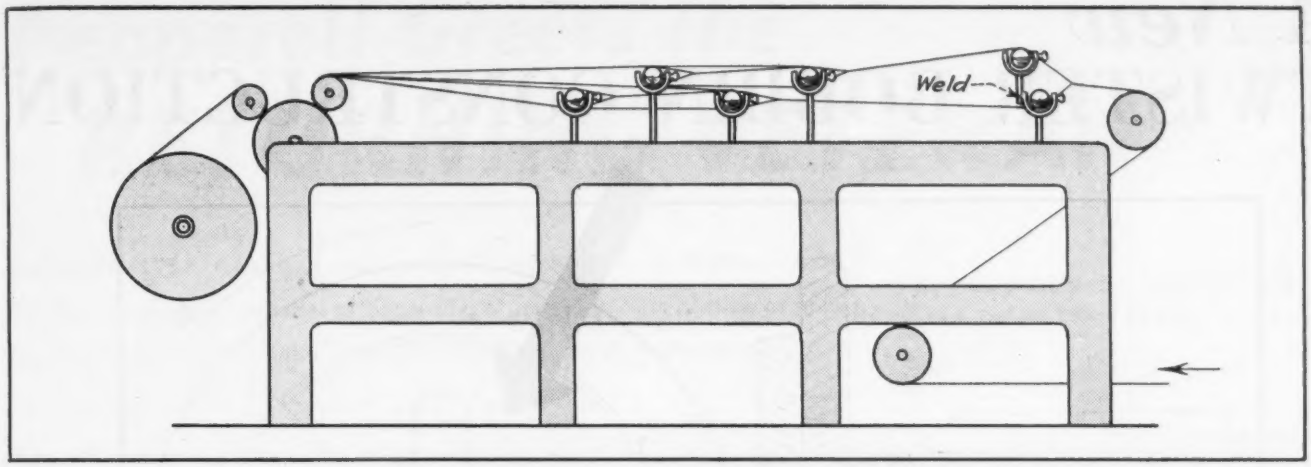


Fig. 2. Two lease rods serve in place of large bust-bar.

and loose fiber-ends which give the yarn a hairy appearance. Size is applied primarily as a binder for the fibers and loose fiber-ends, so that the warp will stand weaving and the loose fiber-ends will not be knocked off in their passage through the loom. The amount of size depends to a large extent on the humidity in the weave room. A high humidity requires a heavier size than a low humidity. Fabrics are very often singed before finishing to remove the fiber-hairs, and the size ingredients should not break down under the singeing operation.

Thin-boiling corn starch 20 to 40 fluidity, 0.65 lb. to the finished gallon, can be used on straight viscose, blends of not less than 75% viscose, and blends with a high percentage of cotton providing the finisher does not object to a rough desizing treatment. The gum-based sizes that are not affected by singeing and which are easily removed in soap and water without rough treatment are preferred by the finisher. On straight viscose-acetate blends with up to 25% acetate, gum-based size has come into general use. If more than 25% acetate is used in the blend, gelatin must be added to the formula as gum does not adhere to the acetate fiber. On blends of 40% viscose and 60% acetate, add 15 to 20% gelatin to the weight of the gum.

In addition to the gum, a high-melting-point wax is used to reduce shedding; and, in some cases, a softener of about 4% fat on the weight of the gum is introduced, although some waxes include a softener and mildew retardant. Two basic size formulas worked out on the above basis are shown in Fig. 3.

It is more economical to use one formula for yarns largely of viscose and one for yarns largely of acetate, as the gelatin-type formula is the more expensive.

GELATIN ADDITION. Gelatin tends to break down at temperatures over 165 to 170° F. and cannot be cooked with the other ingredients. The practice is to dissolve the gelatin in a bucket of cold water and add it to the size at the end of the cooking cycle. It should be stirred for about 5 min. to insure thorough mixing.

Special wax compounds with high percentages of fat are used, and the softener is omitted in some formulas. In others, emulsified tallow (50% fat) is sometimes used with the wax. Two formulas that have been found practical in mill practice are given as follows:

1. For 16s and 30s yarns of straight viscose or of viscose-acetate blends with no lower than 70% viscose:
   90 lb. gum
   6 lb. wax
   130 gal. finished
   Bring to 200° F. for 15 to 20 min. and run in size box at 190° F.
2. For 16s to 30s yarns of straight viscose and of viscose-acetate blends with less than 70% viscose:
   80 lb. gum
   5 lb. gelatin
   4 lb. wax
   175 gal. finished
   Bring to 200° F. in 20 min. and run it into size box at 190° F.

(The wax listed is a special one that contains a softener and mildew retardant.)

FORMULAS VARY. Formulas given can be used to size most of the general run of spun-rayon fabrics. The concentration of the size can be varied to suit coarse or fine yarns; and, in general, the larger the acetate content of the blend, the more gelatin required.

No general rule can be laid down as to the size formula and its application, as many opinions differ. One man likes to make up his size lightly and dress lightly, and another would make up his size heavily and dress the yarn heavily. An eye must be kept on ends down in weaving and on the hand and appearance of the finished fabric. Size formulas should assist in securing the finished fabric desired.

TWO BASIC SPUN-RAYON SIZE FORMULAS

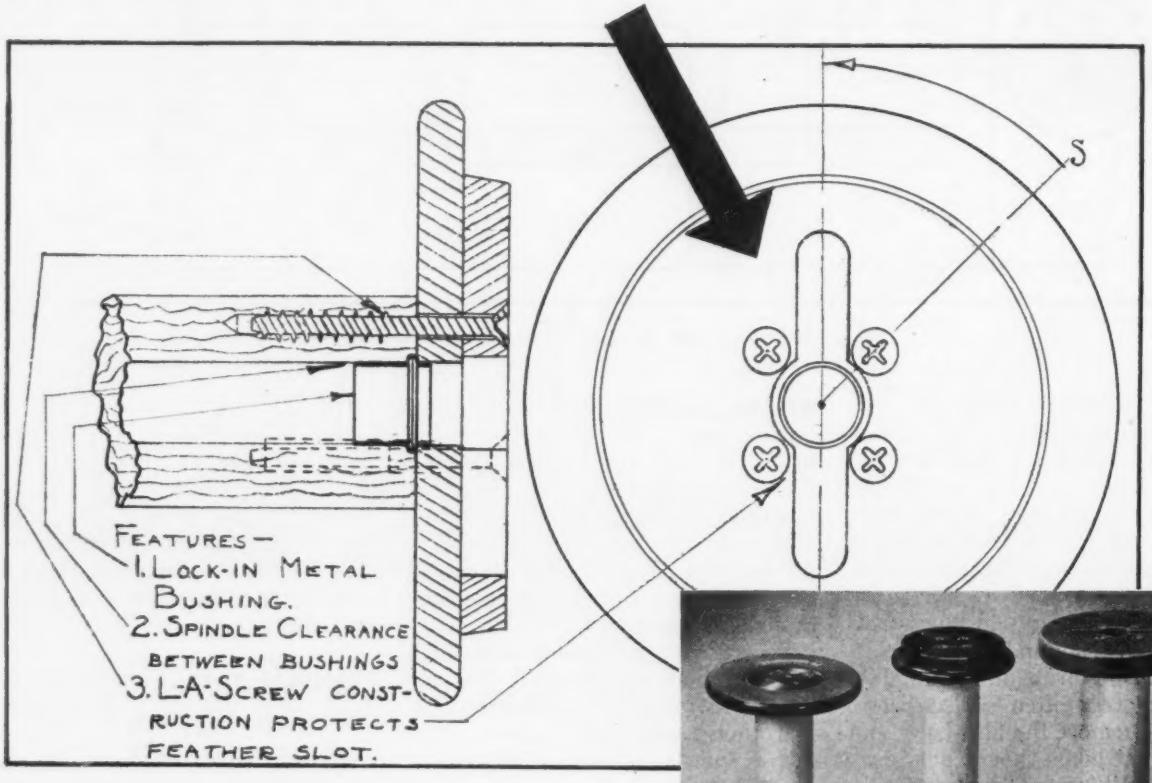
1. Straight viscose and viscose-acetate blends with up to 25% acetate:
Gum—½ lb. to the finished gal.
*Softener—4% fat on weight of gum.
Wax—2½ lb. to 100 gal. to reduce shedding.
Finish 100 gal. (sometimes 200 gal.).
8% size on weight of yarn secured on average.

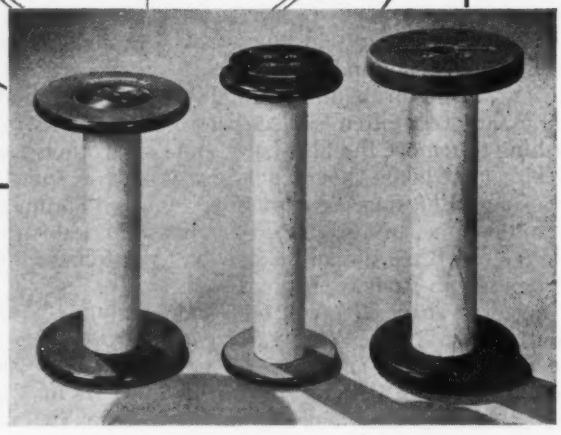
* *Sulphonated oil up to 3 pt to 100 gal. can be used as softener.*

2. Blends of 40% viscose and 60% acetate:
Gum—½ lb. to the finished gal.
Gelatin—15-20% to weight of gum.
Softener—4%.
Wax—2½ lb. to 100 gal.
Finish 100 gal. (sometimes 200 gal.).

Fig. 3. Size, lubricant, and binder are the three elements of a good slashing formula.

A New TWISTER BOBBIN CONSTRUCTION





1 2 3

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Stands Up to All Pressures

Reduces Wear on Spindle Hole

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In the diagram above the main points to note are: (1) steel or brass lock-in spindle hole bushing, (2) spindle clearance between bushings to eliminate unnecessary friction, (3) a reinforced and protected spindle slot possible only with our special Anchor Screw.

1 A Respooler Bobbin for Nylon Yarns—fully reinforced with steel head plates and steel barrel tube to prevent crushing and assure permanent spindle fit.

2 A Tire Fabric Forming Twister Bobbin—embodying all the features enumerated above.

3 A Cable Twister Bobbin for Nylon Yarn—capable of withstanding pressure between the heads up to 6000 lbs. and permitting steaming of the yarn on the bobbin.

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No previous construction embodied all these features. Yarn on the bobbin may be processed by water, steam, heat, etc., without damaging the bobbin. Vibration and pressure cannot loosen the bobbin heads.

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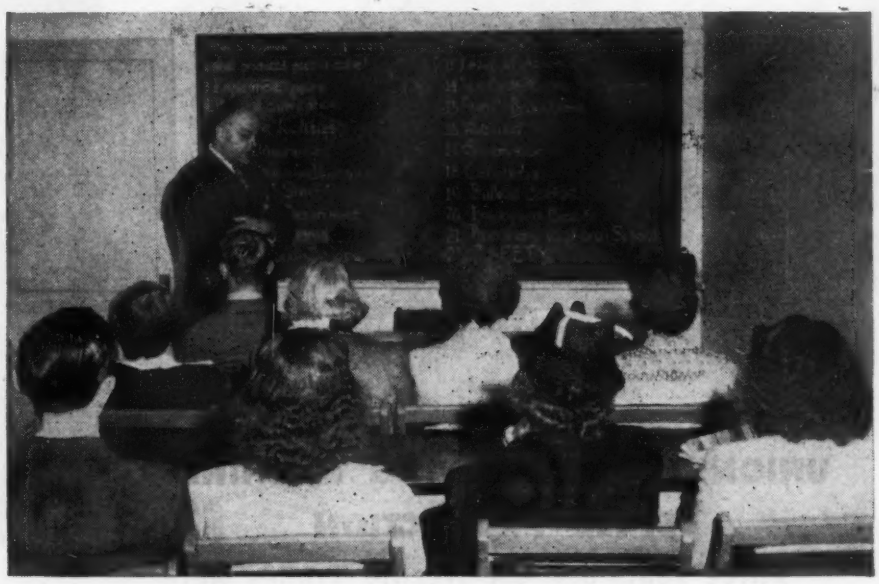
By HOWARD S. KNOWLTON
New England Editor, TEXTILE WORLD

WHEN AN EMPLOYEE of the Biddeford, Me., plant of the Pepperell Manufacturing Co. enters the armed services of the United States, he or she continues to be regarded as a member of the mill family in good and regular standing, but on a leave of absence from usual duties. The management is most desirous of reinstating every such employee in his former post, not only in accord with the Selective Service Act, but because it believes this is the only right thing to do. Where changed conditions require consideration of other work for the home-coming veteran, the management leaves no stone unturned to re-establish him in some other satisfactory job within the company.



Class in "vestibule" training is addressed by M. C. E. Roux, personnel manager, at Biddeford.

MORE THAN A SMILE. Normally there are about 2,650 employees on the plant payroll, but at this writing the total is somewhat less. A substantial number have gone to the armed services. While but eight veterans and two other employees have so far returned, the routine of caring for reinstatement has been carefully developed. The company feels that this is not a program for the future or for the war's end, but a task to be handled now as a part of its daily work. It is estimated that 50 to 60% of the returning veterans will seek their former jobs; and as the personnel manager, Maurice C. E. Roux, puts it, the company "must be ready to greet them not merely with a smile and a handshake, but with a genuine approach to help every one."

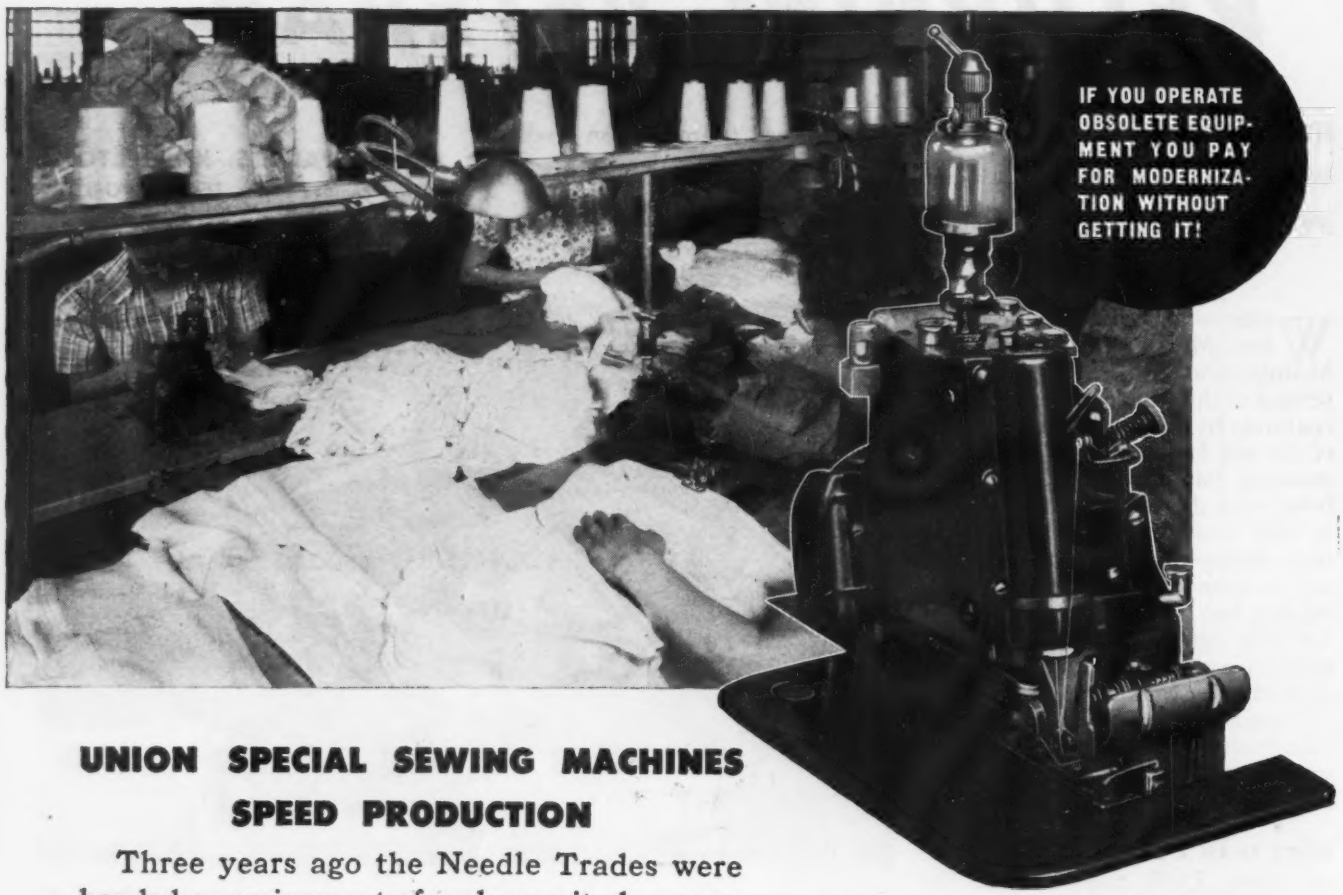
When, at the time of exit-interview with the personnel department, the employee states that his reason for separation is to join the armed forces, he is instructed to forward his address to the department. The employee is advised that a bonus check will be forthcoming if he is entitled to one. Upon receipt of the military address, the mill checks with the employee's relatives as to the date on which he was inducted into the armed forces and also the name of his last employer. This check is important, for in some cases it has been found that an employee has taken another job before entering the service, and it is essential to make sure that the mill was the last employer prior to induction. Incidentally, the time spent in the armed services is credited on the employee's mill record without break, in so far as his seniority and total term of service for the company are concerned.

The information obtained as above outlined is forwarded to the payroll department for payment of any bonus check due. If all is in order, the mill then sets up a military folder on the individual and makes the necessary notations on a seniority master file. His name is also inscribed in a letter-size loose-leaf books, recording for each employee in military service his job classification, department in which he last worked, dates of employment and separation, number of jobs in the mill in this class, date of army or navy discharge, and date of his return to the mill. This gives quick and accurate information as to the employee's status at all times.

WHEN THE VETERAN RETURNS. Most employees will return to their former jobs if the conditions permit; but in some cases they may seek different occupations. Wherever feasible or possible, the mill endeavors to place the veteran in the type of job he is best qualified to handle. If he chooses a different one from that held before induction, he and the mill mutually agree in writing that this is done at the employee's own request and volition, and in full recognition of his being entitled to his former job under the provisions of the Selective Service Act of 1940 as amended.

If the returning employee appears nervous, special care is taken by the personnel department to find out the cause of this condition. This is done with the aid of the medical staff of the mill, examination of discharge papers, and sympathetic talks with the employee. A very important part of the planned procedure is a study of the physical demands of the job based on the War Manpower Commission's occupational-analysis tables. In this way the physical activities and work-

STILL IN THE *THICK* OF THE FIGHT!



UNION SPECIAL SEWING MACHINES SPEED PRODUCTION

Three years ago the Needle Trades were handed an assignment of real magnitude—wartime needs of the Armed Forces plus lend-lease plus civilian necessities. The production record being maintained by the industry is so outstanding as to be a major home front victory. One of the factors in this continued increase in production has been the use of modern, high speed equipment.

The Union Special Machine offers a broad range of specially designed industrial sewing machines to implement the wartime work schedules in any Needle Trades plant. These are machines with built-in superiority — designed and constructed for low cost operation, low cost maintenance, high-speed work, quality work, and complete dependability. Write today for literature — contact the company's representative.

UNION SPECIAL CLASS 39200 OVERSEAMERS

Low cost production and high-speed, high-quality work is attained with the Class 39200 Overseamers. For overseaming, overedging, blind stitch welting, and hemming on all types and weights of materials, these overseamers offer advantages not found in other machines. They allow split second stopping and starting on short runs. They operate at high speed, yet more smoothly and quietly, because of the simplicity of their design. Fine thread may be used because the improved method of thread handling reduces thread breakage to a minimum. The gravity-capillary oiling system means longer life and less maintenance; it also eliminates soiling of materials caused by oil spotting.

Union Special *Machine Company*

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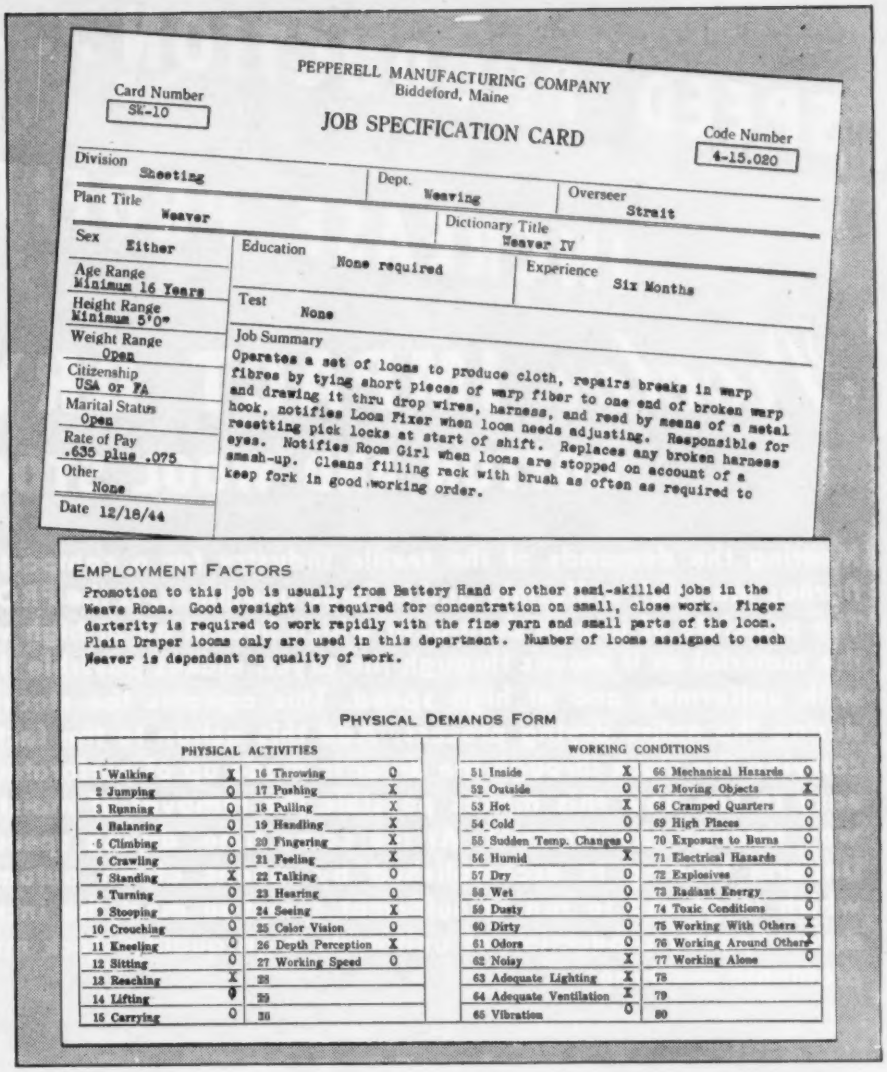
ing conditions pertaining to each classified job in the mill are examined in relation to the adjudged fitness of the returning veteran to meet such requirements. The program provides for a sympathetic study of the returning employee, his wishes and outlook. The record carries a statement as to the full or partial capacity or inability of the employee to meet each of 54 listed physical activities and working conditions applying to jobs. On a 5x8-in. card are listed the physical activities and working conditions of each job.

Veterans who are service casualties may require medical or hospital care, and the local Selective Service Board will put them in touch with the Veterans Administration or other helpful agencies. Veterans are encouraged to make the mill one of their first calls after discharge from the armed services, and to talk things over. If a veteran is found unable to fill his former job and is equal to working, the company will do its best to give him an opportunity elsewhere in its organization.

The welfare of men and women in the service is very close to the mill, and returning veterans will find here sincere advice and a genuine desire to help them get started right. While the veteran has been away in service he has been written to monthly in personal vein by someone on the staff of the company magazine, the "Pepperell Sheet"; he has been sent the house organ itself and, in addition, given remembrances of various kinds at Christmas and other seasons. These have included packets of writing paper, razor blades, reduced-size editions of hometown newspapers, service bags of herringbone twill made in the mill, and reading matter.

EMPLOYEES' SCHOOL. Veterans returning to the mill have the opportunity to learn new jobs, if desired and feasible. War experiences may qualify a man for a different job when given the requisite training. Here an employees' school is of much value. This is located on the mill property and is equipped with adequate textile machinery and facilities for giving both "vestibule" and advanced training bearing upon mill jobs. The "vestibule" training is primarily designed to meet the needs of employee introduction into the mill. If a veteran desires to enter a new job, it may be advantageous for him to take this "vestibule" course, which lasts one week. Likewise some new employees are given this training, whether or not they have been in the armed services. The entire reinstatement program is patterned in accord with that of the Veterans Administration and Re-employment Commission of the Selective Service.



PEPPERELL MANUFACTURING COMPANY
Biddeford, Maine

Card Number: SE-10

JOB SPECIFICATION CARD

Code Number: 4-15.020

Division: Sheeting | Dept.: Weaving | Overseer: Strait

Plant Title: Weaver | Dictionary Title: Weaver IV

Sex: Either
Age Range: Minimum 16 Years
Height Range: Minimum 5'0"
Weight Range: Open
Citizenship: USA or PA
Marital Status: Open
Rate of Pay: .635 plus .075
Other: None
Date: 12/18/44

Education: None required
Experience: Six Months
Test: None

Job Summary

Operates a set of looms to produce cloth, repairs breaks in warp fibres by tying short pieces of warp fiber to one end of broken warp and drawing it thru drop wires, harness, and reed by means of a metal hook, notifies Loom Fixer when loom needs adjusting. Responsible for resetting pick locks at start of shift. Replaces any broken harness eyes. Notifies Room Girl when looms are stopped on account of a smash-up. Cleans filling rack with brush as often as required to keep fork in good working order.

EMPLOYMENT FACTORS

Promotion to this job is usually from Battery Hand or other semi-skilled jobs in the Weave Room. Good eyesight is required for concentration on small, close work. Finger dexterity is required to work rapidly with the fine yarn and small parts of the loom. Plain Draper looms only are used in this department. Number of looms assigned to each Weaver is dependent on quality of work.

PHYSICAL DEMANDS FORM

PHYSICAL ACTIVITIES				WORKING CONDITIONS			
1 Walking	X	16 Throwing	0	51 Inside	X	66 Mechanical Hazards	0
2 Jumping	0	17 Pushing	X	52 Outside	0	67 Moving Objects	X
3 Running	0	18 Pulling	X	53 Hot	X	68 Cramped Quarters	0
4 Balancing	0	19 Handling	X	54 Cold	0	69 High Places	0
5 Climbing	0	20 Fingering	X	55 Sudden Temp. Changes	0	70 Exposure to Burns	0
6 Crawling	0	21 Feeling	X	56 Humid	X	71 Electrical Hazards	0
7 Standing	X	22 Talking	0	57 Dry	0	72 Explosives	0
8 Turning	0	23 Hearing	0	58 Wet	0	73 Radiant Energy	0
9 Stooping	0	24 Seeing	X	59 Dusty	0	74 Toxic Conditions	0
10 Crouching	0	25 Color Vision	0	60 Dirty	0	75 Working With Others	X
11 Kneeling	0	26 Depth Perception	X	61 Odors	0	76 Working Around Others	X
12 Sitting	0	27 Working Speed	0	62 Noisy	X	77 Working Alone	0
13 Reaching	X	28		63 Adequate Lighting	X	78	
14 Lifting	0	29		64 Adequate Ventilation	X	79	
15 Carrying	0	30		65 Vibration	0	80	

Front and back of a job-specification card made out for a weaver, listing working conditions, physical activities, and job summary.

When taking the "vestibule" training, an employee is introduced to a get-acquainted program to facilitate his entry into the mill. The following topics are covered: (1) nature of the company, (2) products made, (3) employment policy, (4) physical examination, (5) first-aid facilities, (6) group insurance, (7) hospitalization insurance, (8) company periodical, (9) personnel department, (10) smoking rooms, (11) identification badges, (12) reporting of absences and the problem of absenteeism, (13) leave of absence, (14) time cards with hours of work and overtime, (15) payroll deductions, (here a magnified check is shown to the class with the gross total and the deductions made for social security, source taxes, insurance, etc.), (16) time of payment, (17) supervision, (18) cafeteria, (19) bulletin boards, (20) employment records, (21) promotion-vocational school, and (22) safety.

Through interviews the personnel department tries to find out as much as possible about the employee's activities while in service. Both overseer and immediate supervision are advised of any information that may be useful in rehabilitation.

It is within the sphere of the personnel department to formulate an adequate pre-employment program. Also, what happens to each man after he goes into any mill department is its chief concern. A history of each is written and filed.

The personnel department has held conferences with supervisors through the foreman's club in order to be prepared for successful replacement. These were on a voluntary basis and well attended.

At such meetings of supervisors the importance was emphasized of special consideration to returning veterans, and it was pointed out that no program could succeed without their active help.

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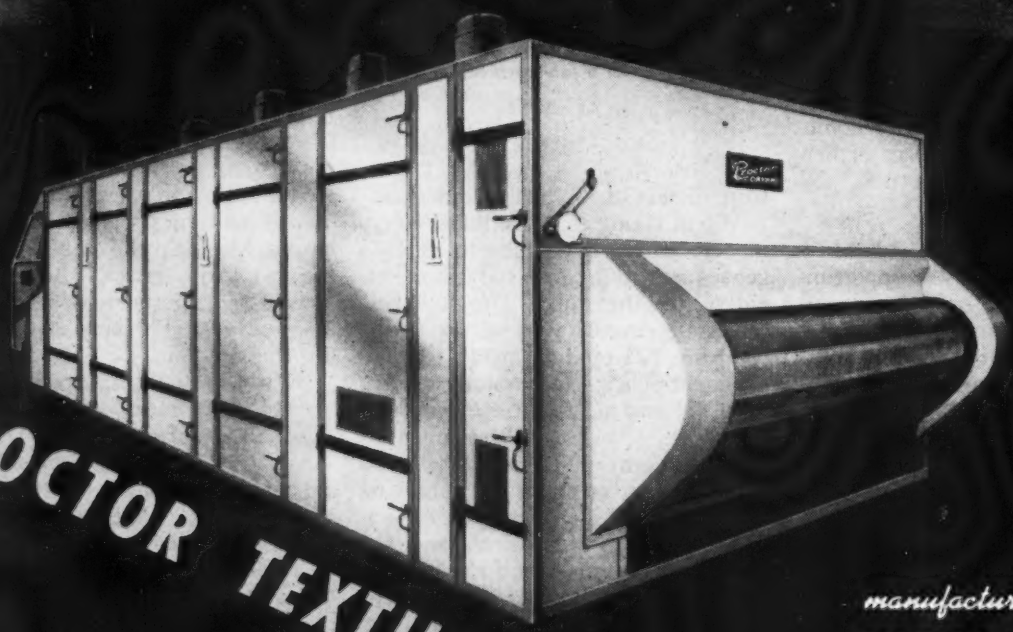
Proctor IMPACT DRYER *for*

COTTON AND WOOL STOCK

Meeting the demands of the textile industry for a compact dryer that would dry fibrous material, uniformly and in large quantities, is the PROCTOR IMPACT DRYER. The principle of impact drying, in which heated air at high velocity is impinged on the material as it moves through the dryer, makes possible the removal of moisture with uniformity and at high speed. This agitates the stock, keeping it in motion during the entire drying process. Add this action to the fact that the conveyor for carrying the stock through the dryer is made up of perforated metal plates and it is easy to see how this makes possible the removal of moisture, uniformly, all the way through the material. At the same time, drying speed is greatly increased. Uniform feeding is accomplished by means of an automatic rotary type feed which is geared to run at sufficient speed to meet the increased capacity of the dryer. Speedy production of uniformly high quality stock makes this an extremely profitable machine.



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Interrelation of Ring, Bobbin, and SPINDLE SPEED Studied

HIGHLIGHTS: Investigation made of the influence of diameter of ring and bobbin and spindle speed on the cotton-spinning process, and their effect on the overall cost of spinning.

By A. N. SHELDON and J. J. BLAKE*

F. P. Sheldon & Sons, Providence, R. I.

IN SO FAR as the authors are informed, there have never been published in the textile literature any charts from which one could predetermine, with approximate accuracy, the optimum diameter of ring and bobbin, and speed of spindle, for spinning any size of cotton yarn from any length of staple, carded or combed. In an attempt to fill this hiatus, we have prepared the graphs which accompany this text. The several curves making up Fig. 1 appear to coincide rather closely with general practice.

Referring to Fig. 1 for 20s yarn, the scale at the right-hand margin denotes various staples of carded (K) and combed (C) cottons from which the yarn is spun, while the scale at the left-hand margin shows the safe spinning tension for these staples. The scale at the bottom of the chart gives the ration of bobbin diameter to ring diameter for the particular condition under consideration.

Suppose, for instance, it is desired to

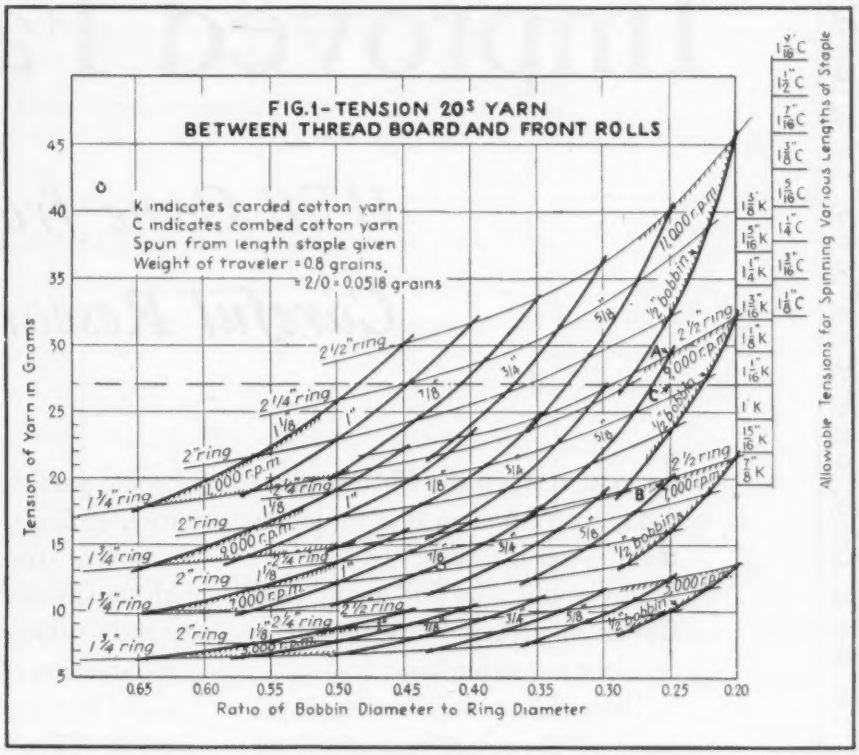
FIG. 1 - TENSION 20s YARN
BETWEEN THREAD BOARD AND FRONT ROLLS
K indicates carded cotton yarn
C indicates combed cotton yarn
Spun from length staple given
Weight of traveler = 0.8 grains
= 2/0 = 0.0518 grains
Tension of Yarn in Grams
Ratio of Bobbin Diameter to Ring Diameter
Allowable Tensions for Spinning Various Lengths of Staple
2½" ring
2¼" ring
2" ring
1¾" ring
11,000 r.p.m.
9,000 r.p.m.
7,000 r.p.m.
½" bobbin
⅝" bobbin

*Abstract of paper presented at annual meeting of the Textile Division, American Society of Mechanical Engineers.

TABLE I—Relationship Between Ring Size, Traveler Speed, and Tension

Ring Dia., Inches	1 3/4	1 3/4	1 3/4	1 7/8	1 7/8	1 7/8	2	2 3/16	2 3/8	2 3/4
Bobbin Dia., Inches	1/2	1/2	1/2	1/2	1/2	1/2	5/8	3/4	7/8	1
Gage	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	4	4 1/4
Spindle Speed	9,000	10,000	11,000	9,000	10,000	11,000	11,000	10,000	9,000	8,000
"b" in Meters	.1621	.1462	.1328	.1621	.1462	.1328	.1328	.1462	.1621	.1814
"h" in Inches	10.80	9.73	8.84	10.60	9.58	8.71	8.58	9.25	10.37	11.00
"h" in Meters	.273	.247	.224	.270	.243	.221	.218	.235	.264	.277
Wt. of Trav. in Grams	.07350	.06229	.05243	.06720	.05587	.04702	.04756	.05360	.06086	.05868
Approx. Wt. of Trav. in Grains	1.20	1.00	0.80	1.10	0.85	0.75	0.75	0.85	0.95	0.90
Approx. Number of Trav	2 1/2	1	2/0	1 1/2	1 1/2/0	3/0	3/0	1 1/2/0	1/2	1/0
Yam Tension in Grams	27	27	27	27	27	27	27	27	27	27

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Will Come from Today's Careful Research

IF YOU VISITED the Cheney plant today, you'd find most of the looms turning out the fabrics of war.

But you'd also find many new fabrics in process of being developed for peacetime use.

These fabrics will be the direct result of the scientific research we put into our military production—plus our long experience with both natural and synthetic yarns. Each one is being engineered for a specific end use. Each one is being planned to utilize the advantages of some particular fiber or combination of fibers. And each one will be woven strictly in accordance with the Cheney standards of quality and workmanship.

Production of these highly specialized fabrics will start soon after Victory. Then the trade will find many uses for these and other fine fabrics bearing the famous name of Cheney Brothers.

And right now, we can all speed Victory by buying more—and still more—War Bonds!

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determine the several combinations of ring diameter, bobbin diameter, and spindle speed suitable for commercial 1 1/16-in. carded cotton. From 1 1/16-in. K at right-hand margin draw a horizontal line to the left-hand margin, indicating a safe tension of 27 to 27.1 grams. Any point above this horizontal line indicates an excessive tension and any point on or below the line, a safe tension, to adopt.

Continuing this line from right to left until it crosses the 11,000 r.p.m. curves with 1-in. and 1 1/8-in. bobbins, we find that a 2 1/4-in. ring is slightly too large in the first case but satisfactory in the second.

OPTIMUM SPEED. Next, suppose a spinning frame is already equipped with 2 1/2-in. rings and 3/8-in. bobbins, and it is desired to determine the optimum speed, with 1 1/16-in. carded staple. First, drop a vertical line from "A" (the 2 1/2-in. ring on the 7,000 r.p.m. curve with 3/8-in. bobbin) and note its intersection with the horizontal line through 1 1/16-in. K, at "C." Obviously, the suitable speed, with 2 1/2-in. ring and 3/8-in. bobbin lies between "A" and "B," at point "C," which is ascertained by finding the ratio of "CB" to "AB,"—that is, as 7 is to 9; and since the difference between 9,000 and 7,000 is 2,000, we add to 7,000 the product of 7/9 × 2,000, or 1,555, and find that 8,555 r.p.m. is the optimum speed for the conditions imposed.

POWER REQUIREMENTS. The horsepower required for each ring size and speed, enumerated in Table II, has been carefully computed, according to the following formula:

$$\text{Hp per spindle} = .000284 \times R^{1.42} \times \frac{(\text{Rev.})^{1.808}}{(1000)}$$

R=Ring diameter in inches
Rev.=Speed of spindle per minute

From subsequent analysis it is obvious what a critical factor is power and fixed charges in the cost of spinning; and the conservation of power, in this process, would appear to deserve serious consideration, perhaps by reducing the weight of the spindle through the use of some suitable combination of aluminum and magnesium, perhaps by driving each spindle with an individual motor (similar to the motor drive of rayon spindles) and so eliminate all tapes, tension devices and cylinders, or

(*Continued on page 178*)

TABLE II—Manufacturing Costs for Spinning 20s Yarn

Data — 1 1/16 Inch Cotton–Twist Constant, 4.50–Turns per Inch, 20.12 — Production, 44,500 lb. per 80 hr. Week

Ring Dia., Inches	1 3/4	1 3/4	1 3/4	1 7/8	1 7/8	1 7/8	2	2 3/16	2 3/8	2 3/4
Bobbin Dia., Inches	1/2	1/2	1/2	1/2	1/2	1/2	5/8	3/4	7/8	1
Traverse	7 3/4	6 3/4	5 3/4	7 1/2	6 1/2	5 3/4	5 1/2	6 1/4	7 3/8	8
Gage	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	4	4 1/4
Spindle Speed	9,000	10,000	11,000	9,000	10,000	11,000	11,000	10,000	9,000	8,000
Yd. on Bobbin	3,538	3,055	2,562	3,969	3,391	2,961	3,339	4,200	5,932	8,736
Sets per Wk.	16.55	21.24	27.58	14.81	19.10	24.00	21.33	15.53	9.94	6.00
Lb. per Spindle	3.50	3.86	4.20	3.50	3.85	4.23	4.24	3.88	3.51	3.12
No. of Spindles	12,714	11,528	10,595	12,714	11,528	10,595	10,595	11,528	12.678	14,262
Cost per wk. Spinning	$ 254	$ 230	$ 212	$ 254	$ 230	$ 212	$ 212	$ 230	$ 254	$ 285
Doffing	158	184	227	141	165	191	170	135	95	65
Winding	375	434	530	338	392	449	402	323	233	164
	$ 787	$ 848	$ 969	$ 733	$ 787	$ 852	$ 784	$ 688	$ 582	$ 514
Day Labor	442	358	358	442	358	358	358	358	442	442
	$1,229	$1,206	$1,327	$1,175	$1,145	$1,210	$1,142	$1,046	$1,024	$ 956
Power	424	461	504	462	512	558	614	640	650	731
	$1,653	$1,667	$1,831	$1,637	$1,657	$1,768	$1,756	$1,686	$1,674	$1,687
Fixed Charges	651	603	567	658	612	574	582	630	708	823
	$2,304	$2,270	$2,398	$2,295	$2,269	$2,342	$2,338	$2,316	$2,382	$2,510
Roll Cover, Spdl. Oil, Travelers, etc.	22	20	18	22	20	18	18	20	22	24
	$2,326	$2,290	$2,416	$2,317	$2,289	$2,360	$2,356	$2,336	$2,404	$2,534
Air Cond. to 70% R. H.	123	133	145	133	148	161	177	185	188	211
TOTAL	$2,449	$2,423	$2,561	$2,450	$2,437	$2,521	$2,533	$2,521	$2,592	$2,745
Add'l Cost for Doffing & Winding with 5/8 inch Bobbin	28	32	14	24	25	24				
TOTAL	$2,477	$2,455	$2,575	$2,474	$2,462	$2,545				

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These units represent the most modern equipment obtainable, and machines that do the scouring and fulling job quicker and easier.

For example, Hunter Fulling Mills are equipped with hydraulic tension for the top roll, stainless steel lining, guides, stop motion, and crimping boxes, and will give you twice to four times the capacity of your older Mills with far more uniform results. Production is often increased to a point where twice the load is handled in two-thirds or even half the time.

The Hunter GK is the most modern available rope type scourer. Equipped with a new principle of applying water to the goods, new type suds box and gates, rubber rolls, roller bearings throughout, etc., it will reduce your overall scouring and rinsing time.

Full details on both of these modern machines are completely described in up-to-date bulletins. They are yours for the asking. Write to

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RAW-COTTON PROBLEM
Thrashed Out in Washington

HIGHLIGHTS: Secretary Wickard proposes sliding income payments during revision of farm practices. Cost reduction in textile manufacture and distribution urged. International conference proposed.

By GLADYS MONTGOMERY
Washington Editor, TEXTILE WORLD

RECENT COTTON HEARINGS held by the Pace subcommittee of the House Agricultural Committee last month served as a sounding board for probable government proposals. In all likelihood these will be in the nature of a dual program composed of adjusted income payments to cotton farmers for a stated period of time on a diminishing scale from year to year. The period will be used to bring about a "reconversion plan," which in turn looks to important modifications in the cotton economy itself through mechanization, research for new uses of the fiber, and a change-over where necessary to other lines of agriculture. During such period it is contemplated that the price of cotton for domestic and foreign use be the same.

Official spokesman for the program before the committee was Secretary of Agriculture Claude E. Wickard. Significant is the fact that Will Clayton, Assistant Secretary of State in charge of Foreign Economics Affairs, has endorsed this program.

DESCENDING PAYMENTS. Referring to his plan, Secretary Wickard said: "Income payments, on a descending scale, during a fixed period of years—perhaps five, perhaps more—should be sufficient for producers who can take full advantage of mechanization and all the other efficient methods that lower production costs. They would cushion the descent of cotton prices to a new level and make allowance for the time required to readjust farming practices and systems. Producers in areas less well adapted to cotton production, and those who would be displaced by mechanization, would need considerably more assistance. Probably their payments should be larger. One way of putting such a policy into effect would be to offer income payments to all cotton farmers, conditioned on following a pattern of farming judged by a local committee utilizing adequate technical assistance."

Secretary Wickard admitted that the program would call for "heavy" government spending for a short period but contended that this would be offset because the plan would make it possible eventually to do away with subsidies altogether. Senator Bankhead of Alabama estimated the cost at $500,000,000 a year, while Mr. Clayton scaled this figure down to $360,000,000. The Pace committee seemed to be favorably impressed with the general outline of the proposal.

What legislative form may result will not be known until such time as the full Agricultural Committee has passed on the recommendations of this subcommittee. Until a permanent postwar plan is launched, it is taken for granted that the present support program will continue.

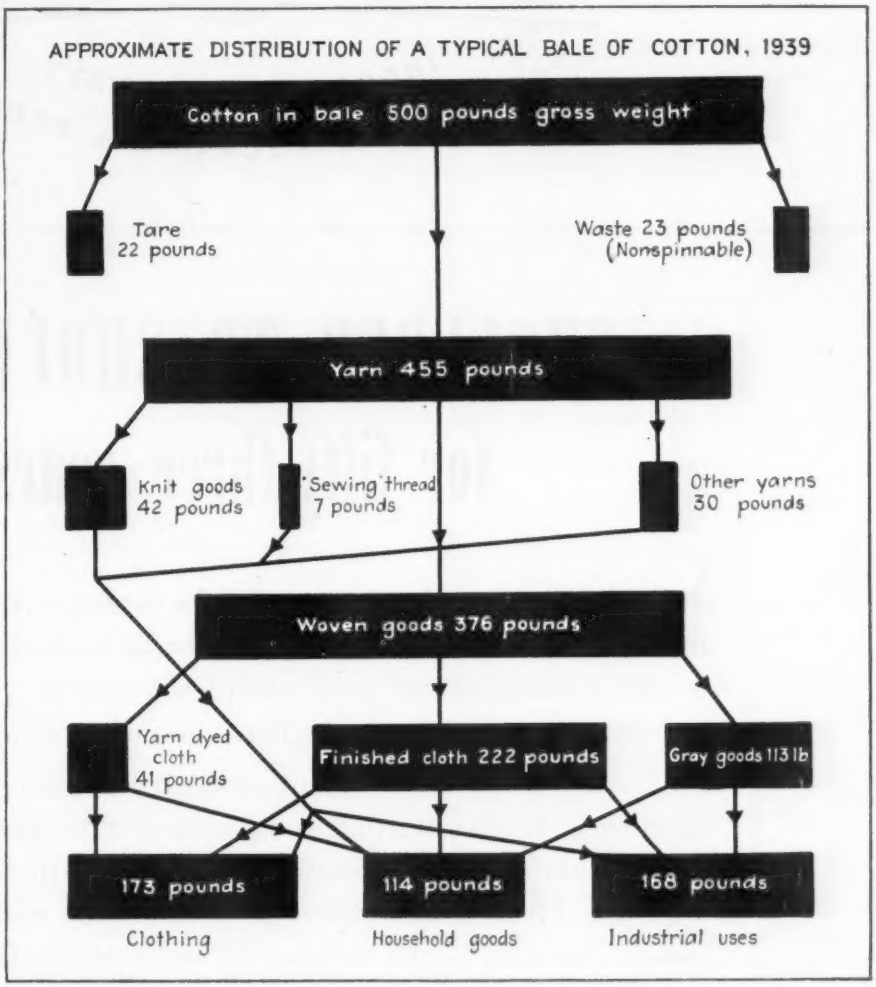

Fig. 1. A Department of Agriculture chart showing what happens to cotton, using as a theoretical example the 500 lb. bale. Clothing gets 38%, industry 37%, household 25%.

OBJECTIONS RAISED. There were those who expressed the belief that cotton will be in an increasingly unfavorable competitive position and that because of this no one can foretell how long it may be necessary to continue income payments or the extent to which the proposed sliding

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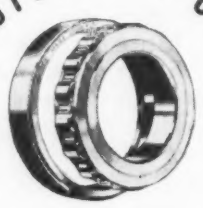
HYATT BEARINGS  **GENERAL MOTORS**

scale from year to year can be effected —or, for that matter, how long the general taxpayer will stand for being saddled with the expense of a subsidy to sustain a sick economy.

Department of Agriculture experts stated that whether cotton can continue to meet price competition will depend largely upon possibilities for reducing costs all along the line.* The weight of marketing and manufacturing margins in the cost of cotton goods was illustrated by a recent study made by the Bureau of Agricultural Economics, from which Fig. 1, showing the distribution of cotton, is taken. The report showed that on the average 90% of the consumer's dollar paid for finished goods is accounted for by marketing and manufacturing margins (Fig. 2). Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, took strong exception to the statement that only 7.5% of each consumer dollar spent for cotton went to the farmer.

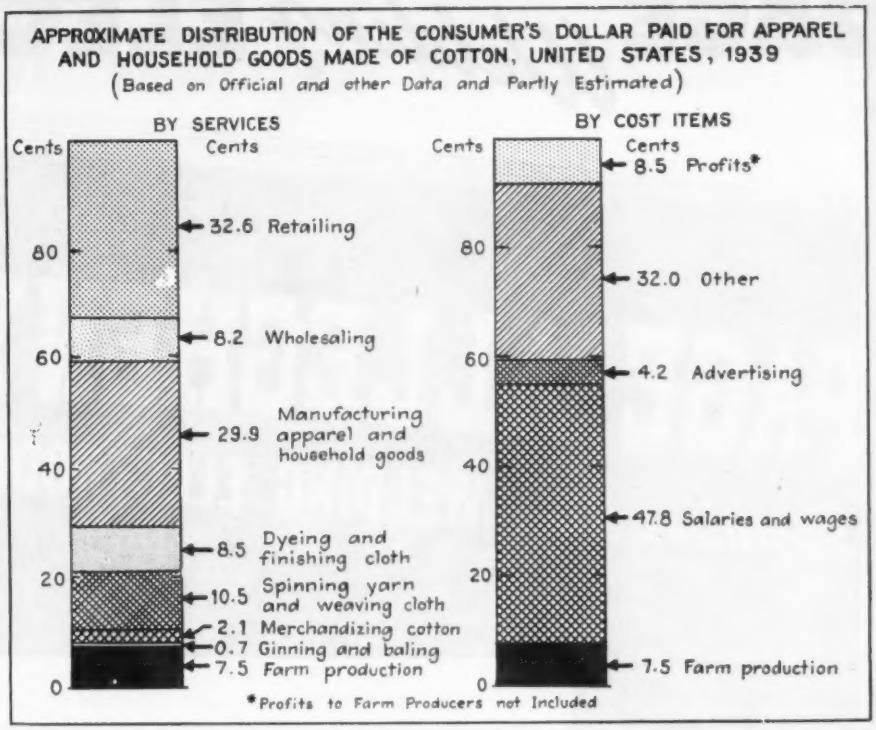

APPROXIMATE DISTRIBUTION OF THE CONSUMER'S DOLLAR PAID FOR APPAREL AND HOUSEHOLD GOODS MADE OF COTTON, UNITED STATES, 1939
(Based on Official and other Data and Partly Estimated)
BY SERVICES
Cents
32.6 Retailing
8.2 Wholesaling
29.9 Manufacturing apparel and household goods
8.5 Dyeing and finishing cloth
10.5 Spinning yarn and weaving cloth
2.1 Merchandizing cotton
0.7 Ginning and baling
7.5 Farm production
BY COST ITEMS
Cents
8.5 Profits*
32.0 Other
4.2 Advertising
47.8 Salaries and wages
7.5 Farm production
*Profits to Farm Producers not Included

Fig. 2. According to this Department of Agriculture chart, only 7.5 cents out of every consumer's dollar goes to farm production. Nearly half of the dollar goes for salaries and wages.

COMPETITION INCREASING. Witnesses emphasized that cotton must meet competition from a variety of materials because of the wide range of its uses. These materials include all the natural and synthetic textile fibers, as well as paper, plastics, leather, rubber, wood, and metal. While only small quantities of cotton have been displaced by some of these materials, the challenge of rayon and paper is not only substantial but is on an increasing scale. Continual improvements have been made in the quality of rayon; and at the same time prices have been greatly reduced, until rayon staple fiber, it was pointed out, currently sells for only some 3c. more per pound than Middling 1-in. cotton, a difference which is offset to varying degrees by greater wastage in the cotton during manufacture.

Non-textile materials, such as paper, offer more of a threat to the cotton mills, Dr. Claudius T. Murchison, of the Cotton-Textile Institute, stressed, since it is impossible to convert any mill equipment to meet the competition. Production of paper products that compete with cotton, such as bags, towels, gummed paper tape, napkins, and handkerchiefs has increased rapidly. During the war cotton has replaced jute to a considerable extent; but a report of the Interbureau Committee on Postwar Programs, submitted at the hearings, indicates that cotton has failed to show its superiority.

Dr. Murchison and many other witnesses argued that, in such a competitive market, cotton must be available to consumers at a market price which is competitive with other materials. Differing sharply with some representatives of cotton interests at the hearings, he contended that a competitive price does not necessarily need to be a low price. In fact, he said, he believes it is possible that economic and scientific forces could support a competitive price which is well above parity. He advocated a flexible price which finds its level through the open prices of competitive materials.

INTERNATIONAL COOPERATION. In urging international cooperation in the handling of the postwar cotton-surplus problem, Dean Acheson, Assistant Secretary of State, told the cotton forum that a plan is under consideration to convene the International Cotton Advisory Committee, which was established in 1939 for the purpose of international discussion of cotton problems. The Council would decide on the advisability of convening an international conference. L. A. Wheeler, director of Foreign Agricultural Relations in the War Food Administration, suggested a "collaborative arrangement by cotton producing and importing countries."

Dr. Wheeler estimated that world import requirements for cotton after the war will be no larger than the average imports before the war, or about 13,000,000 bales per year. The share that the United States will get, he believes, will depend upon (1) price and (2) available dollar exchange in the countries that need to import cotton.

Taking up the question of price, he pointed out that the United States now has a policy of governmental support of the price of cotton close to parity, which is an American formula, not adopted in other cotton producing countries. It seems clear, he said, that a price resulting from this American formula is higher than prices at which other cotton exporting countries are prepared to increase production and exports of cotton. Therefore the United States must be prepared to accept lower than parity prices on export cotton if it wants to keep its position in world markets. Dr. Wheeler did not go so far as to say that there would be no exports at parity, since for a time other exporting countries will not be in a position to supply the total import demand; but he did say that the United States would have to be prepared to take left-overs.

Dr. Wheeler stated that it does not seem to him that, in the short run, shortage of dollars would be a decisive factor in limiting quantities of American cotton bought by importing countries. In the long run, however, because of our position as the greatest creditor country of the world, the ability of foreign customers to buy from us will depend on our willingness to accept goods and services from abroad.

* Suggestions for reducing costs and increasing efficiency in marketing and manufacturing will be found in technical bulletin entitled "Marketing and Manufacturing Margins for Textiles" to be issued by the Department of Agriculture.

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In Business for Your Safety

DEFECTS in Woolen Fabrics

HIGHLIGHTS: Causes of wrong draws, oil stains, salt-and-pepper specks in flannel. Cut stripes in woolen cloth. Preventive measures suggested.

By FRED SYKES

WOVEN WOOLEN FABRICS frequently contain imperfections that do not appear in cloth woven from other yarns. Then, many of the imperfections which appear in fabrics made from other yarns will take on a slightly different appearance when found in woolen cloth. Recognizing this fact, TEXTILE WORLD is presenting this article, the third in a series of fabric defects devoted to woolen cloth.

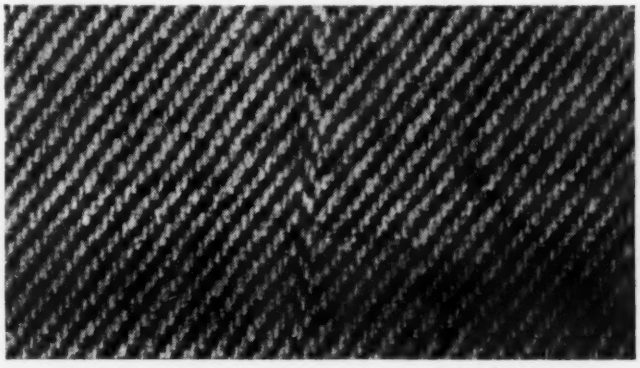
Other defects covering cotton, rayon, jacquard, and woolen fabrics have appeared in earlier issues of TEXTILE WORLD. Many of the definitions given have been approved and included in the "Glossary of Textile Terms Relating to Textile Materials," issued by Committee D-13, ASTM.

Operating executives, weave-room overseers, fixers, burlers, and menders will find this series of assistance to them in their everyday work. The defects illustrated and defined are offered with the thought that they may assist in the formation of a standardized nomenclature for defining defects occurring in woven fabrics. Also, they should be of assistance in correcting such defects as they appear, because listed beneath each fabric is a number of the most common causes for such fabric imperfections.

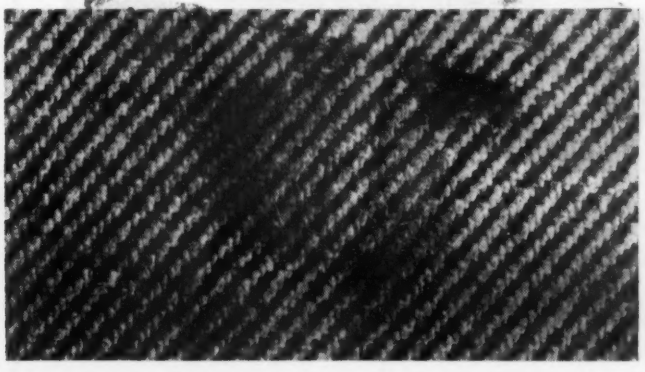
Many of the oil spots may be removed with solvents. It is advisable, when using solvents, to place a clean cloth beneath the spot to which the cleaner is being applied. The cloth will absorb the oil and solvent. If a clean cloth is not placed beneath the fabric, a ring may be left on the surface of the fabric.

Specks and spots may frequently appear in fabrics when only a small percentage of a color is being blended with another color which comprises the greater portion of the wool in the blend. Common practice, in avoiding the creation of specks, is first to card the small percentage of wool before blending it with the other wool. Then run the entire lot through the card. Also, the use of cut tops is beneficial in preventing specks.

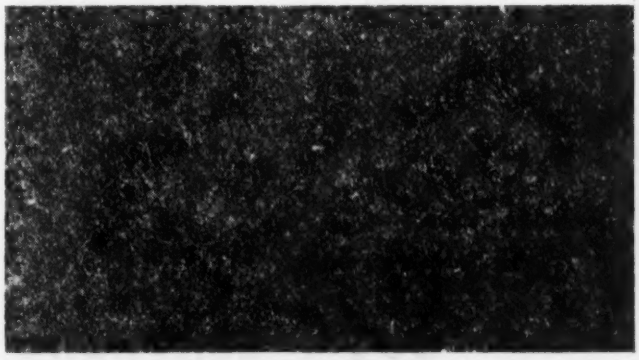
While decorative stripes were formerly warped on separate beams, common practice today is to beam the decorative stripe along with the woolen or worsted warp yarns. When silk or rayon is being used for striping, care must be exercised not to have excessive tension applied to the decorative yarns. Otherwise some of these ends may break or become cut, as illustrated in the accompanying photograph.



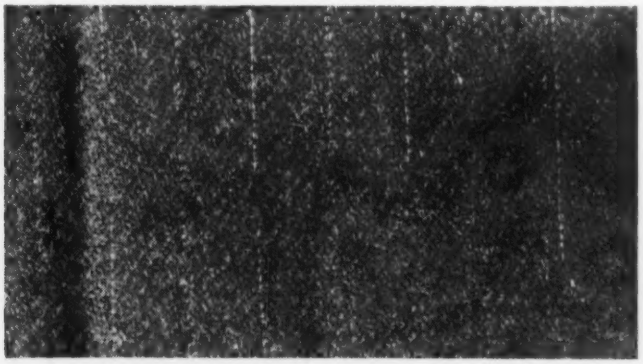
Wrong Draw—*Appearance:* Stripe in fabric running warpwise; usually does not repeat. *Causes:* Drawing-in operator draws one or more warp ends into the wrong harness. Inspection of harness dropper may prevent mistake. During weaving a weaver may draw several broken ends into the wrong harness.



Oil Stain—*Appearance:* A spot of deeper shade appearing on fabric surface. *Causes:* Over-lubricating of loom. Oiler placing oil can on woven cloth. Excessive oil on swab on shear or a small hole in swab. Oil dropping from shafting and motors on ceiling or being thrown from overhead bearings.



White or Black Specks on Flannel—*Appearance:* Fabric has "salt and pepper" spotted appearance. *Causes:* Cards not set correctly, hence producing neps. Wire dull and not set close enough. Fancies on card rolling stock. Stripping periods spaced too far apart. Blend has been over-oiled. Improper selection of stock; use a free-pulling wool.

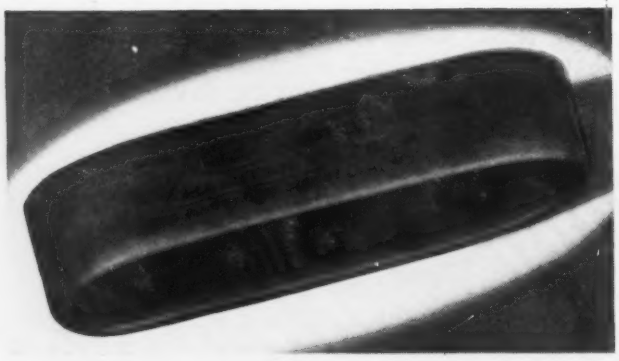


Broken or Cut Decorative Stripes—*Appearance:* Decorative stripes appear to be missing over various areas of fabric. *Causes:* Silk or decorative stripe may be dressed too tight. A sand roll with too coarse a covering will cut decorative yarn. With fine fabrics use a No. 00 sandpaper for covering the sand roll. (This defect also applies to worsteds.)

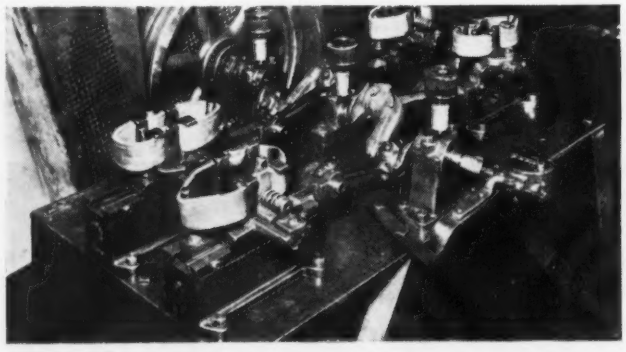
42 Months ON The Loom

This Graton & Knight "Two-Fold" Check Strap of "Hairitan" leather operated in a mill three shifts a day for 14 months—the equivalent of better than 42 months' normal service, considering it had no periods of "relaxation" between shifts.

TYPICAL ORANGE LINE PERFORMANCE



Records like this demonstrate the high tensile strength (averaging 6000 lbs.) and resiliency of Graton & Knight's "Hairitan" leather — acknowledged at least the equal of any "European-type" hair-on leather. The unique "Two-Fold" construction permits the strap to adapt its contour to the angle of the picker stick at the point of maximum impact.



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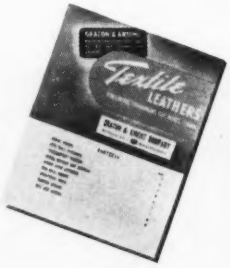

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Good RAYON THROWING Requires Accurate Twisting

HIGHLIGHTS: Variation in twist should not exceed two turns per inch. Flyer used depends upon yarn and twist. Heavy yarns require lower spindle speeds.

By S. J. MILLER

FOR THROWING RAYON YARNS the most desirable twister has been a double-deck model with 5-in. spindle spacing and an individual motor on each deck. All late machines are built so that the spindle belts can be put on endless, and have automatic belt take-up arrangements so that a uniform belt tension is maintained. Separators should be placed between spindles to prevent fly-overs from one spindle to another, which would cause end breakage and soiled yarn. Often separators are mounted in such a way that they can be removed, or swung out, for easy cleaning.

Easily removable oil pans should be provided between the top and lower deck to prevent any oil drops and waste dropping on to yarn on the lower deck. Machines are preferable which have a twist-gearing arrangement that permits obtaining the twist desired by quickly putting on one gear with the same number of teeth as turns per inch wanted.

When twisting rayon, the number of turns per inch required must be controlled accurately. Usually only 2 t.p.i. variation is permitted. Variation over 5 t.p.i. is dangerous.

PRECAUTIONS. Items which are important in the spinning or twisting department follow:

1. All spindles should be tested daily with a stroboscope.
2. All spindles, idlers, and swing-gates should be oiled regularly.
3. Spindle belts should ride at least $\frac{1}{8}$ in. above the flange of the idler.
4. All pig-tail eyes on the girt rail should be lined with the center of the cork take-up rolls and with the tips of the spinning spindles.
5. Machines should be cleaned sufficiently often to keep them free from lint, waste, and dirt.
6. The cork take-up rolls should be aligned so that the heads of the take-up shafts (steaming bobbins) do not rub the edges in any manner.
7. Take-up fingers should be aligned so that steaming shafts do not bind.
8. Winding-spinning bobbins should not ride on the whorl of the spindle.
9. All bearings should be kept clean.

FLYERS. Flyer-wire size has an important bearing on tension. The wires should run with as light tension as practicable for the yarn, yet not so light as to cause sandy crepe or snarls. The flyers used can be either McHale or Herr, but four-arm flyers of the eccentric-base type are preferred. The drop-arm of the flyer should just clear the head of the spinning spool. The straight-arm usually is flush with the edge of the head. The wire size is governed by spindle speeds, twists, and denier size.

The type and weight of a flyer block depends largely upon the diameter of the spinning-bobbin head. Usually bobbins 3 in. and over will require a long-base flyer block to prevent undue flexing of the flyer wires.

When running Bemberg (cuprammonium) no-twist yarn into high-twist crepe, good results have been obtained by using a figure-8 flyer at a spindle speed of 9,500 r.p.m. This flyer prevents ballooning of the yarn, which, having no preliminary twist, would tend to open up and break the filaments. Cuprammonium yarn is more difficult to twist into voile or crepe than viscose rayon.

STEAMING. After spinning or twisting, the yarn is ready to be steamed or conditioned to the twist. The purpose of this operation is to permit the yarn to be wound off the steaming shafts without letting the yarn kink or snarl. The yarn is wound on spools for warping purposes, for filling purposes, or for plying into combination yarns.

Best results are obtained by using one of the automatic twist setting conditioners. All that is required is to set the dry and wet bulb at temperatures desired, and to set an electric clock at desired time. The timer clock will shut off the box at the proper time. Fig. 2 shows settings that have been used with very good results.

SPINDLE SPEEDS

for throwing rayon yarns

1 to 30 turns (except 200, 300, and 450 den.)	9,600 r.p.m.
1 to 30 turns—200, 300, and 450 den.	8,800 r.p.m.
31 to 70 turns—75 den. to 200 den.	11,600 r.p.m.
75-den. Bemberg	9,500 r.p.m.

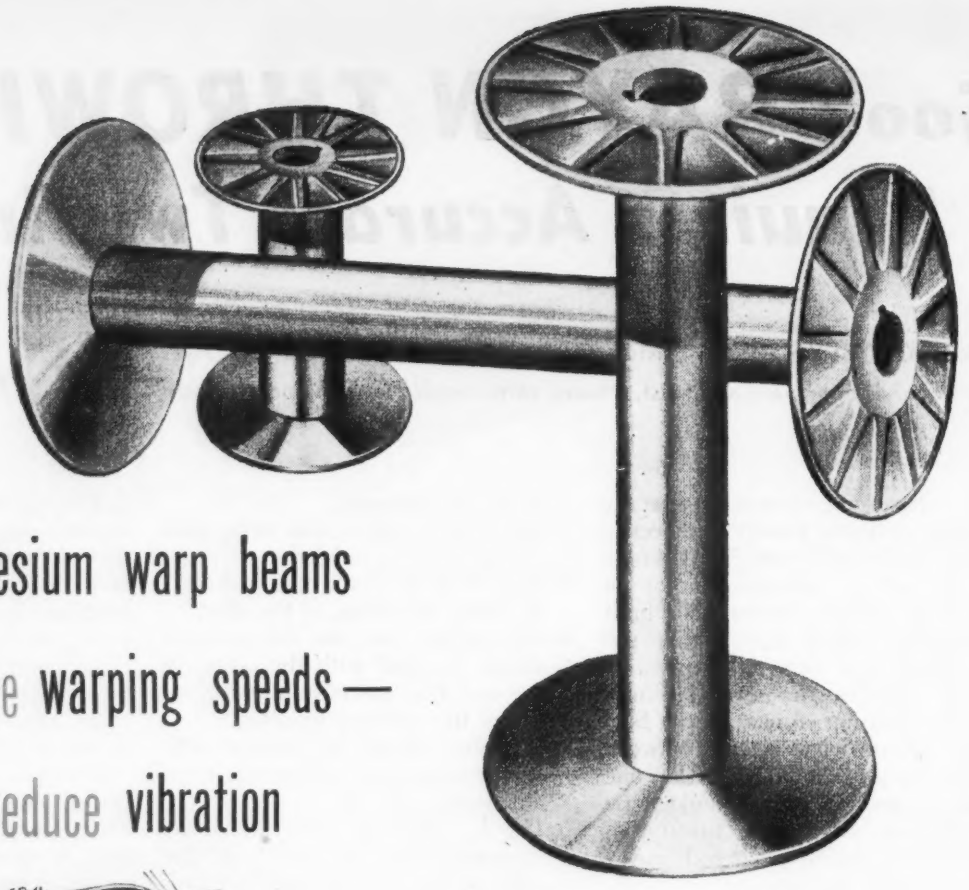
Fig. 1. Usually ½-lb. packages are preferred for yarns heavier than 75 den.; 1/3-lb., for yarns lighter. For 75-den. both sizes are used. Speeds given are approximate.

STEAMING SCHEDULE

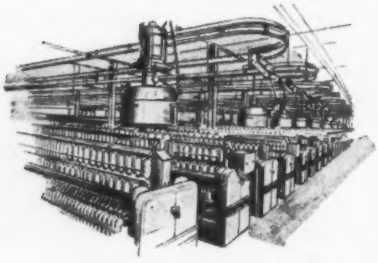
for rayon yarns

Description	Time	Dry Bulb	Wet Bulb
Voiles	1 Hr.	180	160
Crepe	2 Hr.	174	168
Combinations	2 Hr.	180	160

Fig. 2. These times and temperatures are for ½-lb. packages; smaller packages require less time. Note that less moisture is needed for voiles and combinations.



Magnesium warp beams increase warping speeds— reduce vibration



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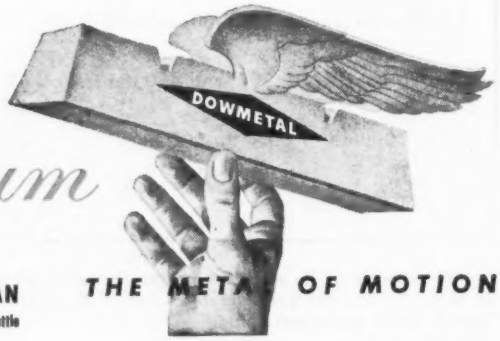

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THE METAL OF MOTION

GOOD YEARS Foreseen By Hosiery Men After War

HIGHLIGHTS: Postwar planning committee expects no nylon for civilian use till after Pacific war. Urges schedule of steps in nylon reintroduction. Recommends better merchandising and cultivation of exports. Yarn outlook.

"WE BELIEVE that it is safe to assume that the demand for the products of our industry will be above normal for three to five years following the conclusion of the war." Such is the opinion of the Hosiery Industry Postwar Planning Committee of 52 members, appointed by the National Association of Hosiery Manufacturers, on April 20, 1944, which made its report on Jan. 8, 1945.

The report is issued over the signature of Earl Constantine, president of the association, who served as chairman. It covers seven main subjects which are abstracted as follows:

Hosiery Committee believes that nylon will not be available for civilian use until after the war in the Pacific is over. It recommends a schedule of reintroduction which would delay retailing until a working supply of the hosiery is built up, which would be 4½ months after release of the yarn.

EMPLOYMENT. The substance of the mills' legal and moral obligations in employment of returning servicemen is given. NAHM will later issue a special and more detailed bulletin.

EQUIPMENT. It is urged that NAHM apply to WPB for earliest possible termination of restraint on reconstruction or reconversion of hosiery knitting equipment. The committee estimates "that it will require such manufacturers from three to five years after resuming the manufacture of knitting equipment to produce and deliver the orders which will face them when they return to normal production."

When nylon becomes available for civilian use, there will be immediate need for a substantial increase in preboarding equipment and capacity, as about 200 more mills are potential users of nylon in addition to the 300 which formerly used it. The committee suggests means for building up this capacity from existing preboarding equipment which may not be in full utilization, and to this end the National and Southern associations will issue service bulletins to uncover surplus capacity.

FOREIGN TRADE. The committee strongly recommends that the industry give careful and favorable consideration to supplementing its domestic market with an established foreign market. The NAHM has consented to issue a series of letters presenting essentials and mechanics of exporting.

GOVERNMENT SURPLUSES. The committee believes the only surplus to be encountered directly comprises Army and Navy men's half-hose of types purchasable by civilians. The committee favors earliest possible diversion of this surplus to postwar foreign relief.

MERCHANDISING. Policies have been affected by wartime conditions in some cases in the direction "of correcting or suspending practices which were in essence unsound, unfair, or otherwise undesirable." The committee believes that "the industry should pursue the sound policy of refusing cancellations."

PRICE CONTROLS. "The price control regulations," says the report, "have, generally speaking, avoided severe inflation. Price control is acceptable and excusable only as a wartime measure. It is desirable that the existing controls be terminated as quickly as can be without risk."

YARNS AND MATERIALS. 1. *Cotton Yarns.* "The industry is a large user of cotton yarns and will continue in such a position after the war."

2. *Elastic Yarns.* "These are of two types—Buna S and Neoprene. Of these, Neoprene has proved the more satisfactory in hosiery. It is expected that the supply will increase gradually during coming months."

3. *Nylon Yarn.* "The Committee believes that when civilian use of the yarn is resumed under full normal conditions, the amount available to our industry will be at least treble what it was before the war, and probably as much more as the industry requires."

4. *Rayon Yarns.* "High-tenacity rayon yarns will be gradually available to our industry after the war. This will make possible production of even more satisfactory rayon stockings, for which, we believe, there will be an established market."

5. *Silk Yarns.* "Estimates vary as to what percentage of women's hosiery will be silk when nylon returns, but 20% appears an outside estimate.

6. *Wool Yarns.* "The situation is very likely to ease up in 1945."

7. *Reintroduction of Nylon Hosiery for Women.* A special task committee reported: "The demand for such hosiery when it returns to the market is bound to exceed the supply in such disproportion as to require that the return shall be orderly and equitable to all. . . . Expressions from official sources indicate that such return may not be possible before V-P Day." The committee recommends that mills should not ship to distributors until aggregate production has reached a total of 3,000,000 doz. prs., requiring a minimum of 1,500,000 lb. of nylon yarn. "The program should provide that shipments of nylon hosiery by manufacturers to their distributors or outlets may not be made prior to a date set approximately 60 days later than the date on which the last distribution of yarn by the producer for a total of 1,500,000 lb. has been made. The Committee believes that a date for resumption of retail sales, whether over-the-counter or by mail, should be set not earlier than approximately 30 days after the date on which shipments by hosiery manufacturers to their customers are permitted. . . . The Committee feels that when nylon's use is again permitted in the production of civilian products, it should be available for use on knitting machines of all gages and of all needles. . . . Under the program outlined retail sales of nylon hosiery to the consumer will not take place until 135 days from the time that nylon is available for civilian products."

The Committee stresses that agreements relative to observing fixed dates are of questionable legality unless directed by the government.

99 Years of Leadership *in making valves for industry*

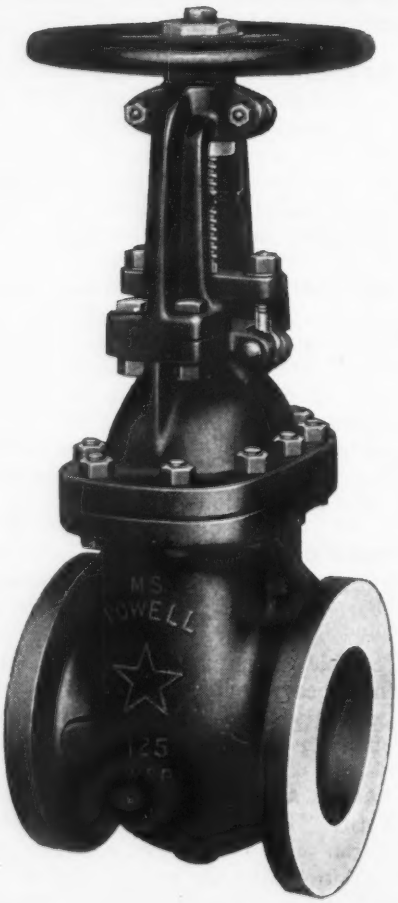
In a book on Cincinnati, published shortly after the Civil War, the following statement concerning the Wm. Powell Co. appears—"the Company, founded in 1846, manufactures the celebrated "Star" Regrinding Globe Valve, now in use in all parts of the country." Shown at the extreme right is the drawing used in 1865 to get the patent on this valve. The plant in which these valves were being made at that time is shown in the inset.

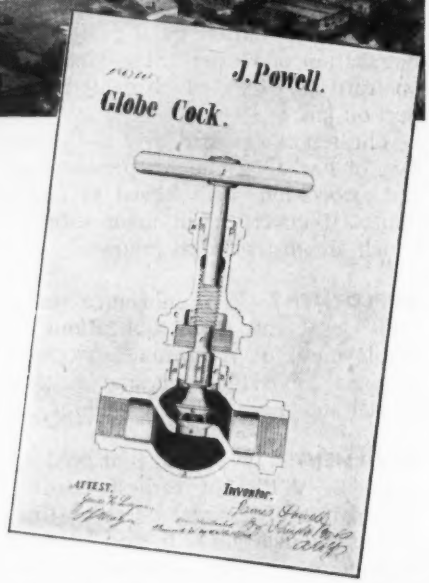
Today, in modern plant buildings covering many acres, the company is making a complete line of Globe, Angle, Gate, Check, Relief, Y, Non-return and other types of valves in bronze, iron, steel, pure metals and special alloys for corrosion resistance (catalogs on request).

The Wm. Powell Co.

Dependable Valves Since 1846

Cincinnati 22, Ohio





Through the years, Powell Engineering has developed a complete line of valves of all types, designs and materials necessary to control the flow of media used in the Textile Industry. These include All-Iron, Stainless Steel, Monel Metal and Pure Nickel for handling dyes, acids, mordants, bleaching solutions, etc.

The valve shown here is an All-Iron, Flanged End, O. S. & Y. Gate Valve. It is available with Taper Wedge Solid Disc in sizes 2" to 30", inclusive, or with Double Disc in sizes 2" to 12", inclusive.

In addition to the more common types, Powell has developed a line of Flush Bottom Tank Valves, specially made to drain metal tanks (with or without steam jackets) glass or vitreous lined tanks and autoclaves. These valves are made on special order only and can be furnished in any size from ¾" to 8" inclusive, in a variety of pure metals and special alloys.

POWELL VALVES

Pointers on Building Good EMPLOYEE RELATIONS

HIGHLIGHTS: Mill must first provide good working conditions. Induction and training are important. Courtesy, fairness, and understanding vital.

By H. G. BRADSHAW*
Personnel Director, West Point Mfg. Co.

GOOD WORKING CONDITIONS constitute the first physical contribution to good human relations that management is obligated to provide. Clean, sanitary surroundings are indispensable. Atmospheric and other conditions should be made and kept as pleasant and comfortable as modern scientific methods make possible. Such working conditions are conducive to a like interest on the part of the worker in his own personal and home living conditions as well as in the development of a sense of pride in the place where he works.

The new employee should be intelligently and carefully interviewed in the preliminary routine of employment, and he should be familiarized with the processes and products of the plant in which he is to work. It seems a sound procedure that the first few hours be spent in touring the plant from the cotton warehouse through the opening room, picker room, carding department, spinning, slashing, weaving, cloth room, and shipping department. This gives the newcomer a comprehensive picture of what the whole thing is about and what part he is to play in the game. It heightens his appreciation of the importance of his own job and tends to dissipate the strained feeling naturally incident to new surroundings.

The next important thing is a really adequate training program, a down-to-earth, honest-to-goodness, scientifically developed and consistently and persistently administered training program, simple enough for everyone, yet adequate to the needs of every job. The training program should be applicable without exception to every new employee, and every employee on a new job, from sweeper to overseer. Induction and training will spell the difference in the long run between profit and loss.

COURTESY. Among other essential elements, let me mention courtesy. Courtesy is something which every employee should be accorded, even though he be lacking in courtesy himself. Courtesy is the mark of a gentleman and can be a most effective tool when used by a superior especially in dealing with a subordinate. Remember that if you resent harsh language and a cutting tone, the other fellow does, too. Courtesy should be practiced even when it becomes necessary for an employee to be separated. The supervisor will do himself and the company credit by maintaining an attitude and tone of utmost courtesy in the separation interview.

When changes are to be made in the working schedule, or in the type of work, or any other changes, they should be explained fully and understandably to each employee who is to be affected. Natural reluctance toward making any alteration in the established routine of our lives has an important bearing on the satisfaction and efficiency of workers.

If we expect employees to have confidence in and respect for management, the spirit and practice of absolute fairness must characterize our dealings with them. There must be like treatment for all—no partiality or favoritism either because of the person who is involved, or because of the importance of the job. For example, if there is a rule, and there should be, relative to penalties for unexcused absence from work, the rule should be fairly and impartially applied irrespective of what individuals or jobs are involved. The sweeper and the weaver should be treated alike.

GRIEVANCES. Another contribution by management to the improvement of human relations is patient, sympathetic and understanding handling of grievances no matter how insignificant or unwarranted they may appear to be. When a person makes a complaint, he at least feels that there is some justifiable reason for it. Smart supervisors listen patiently and try earnestly to see the matter through the eyes of the one making the request or complaint, and they will take time to make clear a valid reason for denying the request if not feasible to grant it.

A definite and systematic plan for recognition of tenure of service should be worked out in every company. Commendation and appreciation go a long way in satisfying one of the basic desires of man in every walk of life. When a worker does even reasonably well, compliment him. Don't let your personal contacts be too infrequent. If it is necessary to correct or reprimand an employee, try to find something first for which to commend him. Such procedure makes a good background for effective correction.

Supervisors have the greatest responsibilities and the most challenging opportunities in the field of human relations. They translate their company's politics into dealings with those who work under them. They are the voice of management, and represent the policies of the company.

8 ESSENTIALS FOR GOOD LABOR RELATIONS

Here are Mr. Bradshaw's eight points for good relations between employer and employee:

1. **Good working conditions.**
2. **Carefully planned induction of new employee.**
3. **Adequate training program.**
4. **Courtesy.**
5. **Explanation of any changes affecting employee.**
6. **Fairness and like treatment for all.**
7. **Sympathetic handling of grievances.**
8. **Recognition of tenure of service.**

* *Abstract of talk made by Mr. Bradshaw before the Cotton Manufacturers Association of Georgia on Nov. 25.*

Announcing

A NEW SYNTHETIC WETTING AGENT THAT IS

*"Tops" in Efficiency**

*ON THE BASIS OF APPLIED COST

QUAKER DIANOL #11

THE GRAPH above gives you wetting speed facts—not claims—about DIANOL #11.

Try DIANOL #11 in your processing against other wetting agents, and prove the next fact—that DIANOL #11 is lowest in applied cost.

DIANOL #11 is *stable to heat* and non-volatile. Its *re-wetting* efficiency is not impaired by drying temperatures ordinarily employed in textile processing. This makes DIANOL #11 uniquely satisfactory and economical in the sanforizing process . . . or wherever rapid re-wetting is desirable.

DIANOL #11 is available for your use *now*, thanks to earlier-than-expected release of raw materials. The handy reply form below will bring you more detailed information than can be included in the following summary of its outstanding advantages:

- **Most efficient on the basis of applied cost.**
- **Applicable to all phases of wet textile processing requiring a synthetic wetting agent of high quality and low applied cost.**
- **Stable and effective in solutions of 1-12 pH.**
- **Is an excellent sanforizing and re-wetting agent.**
- **Stable and effective in hard or soft water and over a wide range of temperatures.**
- **Does not discolor white goods or alter shades.**
- **Rapidly wets out cotton, wool, rayon or acetate fabrics.**

QUAKER CHEMICAL PRODUCTS CORP.

CONSHOHOCKEN, PA.

Other Plants in CHICAGO and DETROIT Warehouse Stocks in Principal Industrial Centers

For more details on QUAKER DIANOL #11, fill in below, tear out and mail.

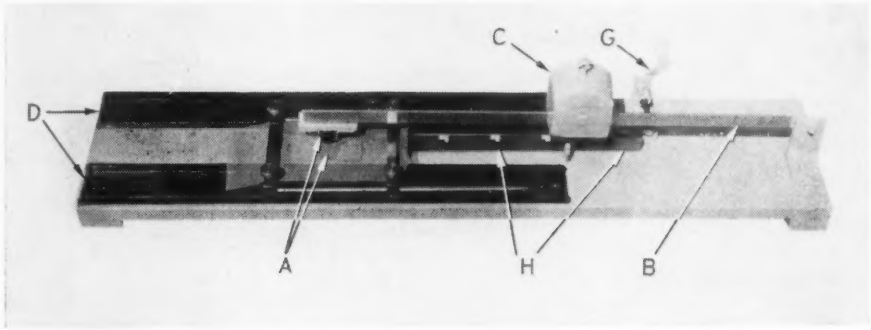
A Progressive Organization of Research and Process Engineers and Manufacturing Chemists

Name_____ Position_____

•••PLEASE PRINT COMPANY NAME AND ADDRESS IN MARGIN BELOW•••

TEXTILE Equipment NEWS

Yarn-Slippage Resistance Measured



Tester for measuring yarn-shifting resistance (U. S. Testing)

After considerable research and development work, the United States Testing Co., Inc., Hoboken, N. J., has completed the building of an apparatus for measuring the yarn-shifting resistance of woven fabrics.

The Fabric Shift Tester accurately measures the amount of pressure necessary to create an objectionable opening in a fabric. Tests are made on materials after three launderings to remove the bulk of finishing material and reduce the fabric to its lowest resistance to yarn shifting. Minimum standards will be set up for each class of consumer fabrics.

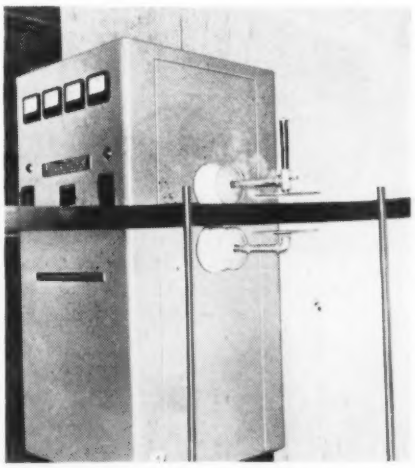
About a half-yard sample of fabric is required for the test. A 14-in. by 4-in. sample is placed between the rubber jaws *A*. On the calibrated arm *B* is placed a weight *C*. The carriage is moved over a set of rails *D* by means of a crank *G*. Carriage may be moved to different positions, as indicated by the slotted rod *H*. Jaws should be turned in their clamps to present a new surface after each 40 cycles. After completing one revolution in their clamp, jaws should be replaced.

Electronic Drying of Textiles

A rapid, efficient process for the drying of textiles using high frequency heat, has just been announced by the Industrial Electronics Division, Federal Telephone & Radio Corp., Newark, New Jersey; an associate of the International Telephone & Telegraph Corp. The equipment for this application is known as a Megatherm electronic heating apparatus.

Based on the principle of dielectric heat generation, which makes possible the production of drying heat directly within the water or dye vehicle proper, Megatherm high-frequency heating can be used in fabric drying processes throughout the textile industry.

Tests made by Federal engineers show that water or dye vehicles can be completely vaporized and driven off from fabrics without reaching a dangerous temperature in the fabrics and within a short time of two seconds. Capacity of electronic drying units can be varied by increasing or decreasing kilowatt output of the equipment used. Tests established that even the smallest Megatherm unit, three kilowatts output with power cost of five cents an hour, generates enough heat for narrow-web fabric drying in a continuous process at the rate of 60 ft. per min. Larger units are required for wide-web fabrics or for higher speeds.



Electronic heating unit used for drying narrow-web fabrics (Federal)

Absolute heat control at all times assures complete and uniform drying and eliminates all possibility of loss or damage from over-heating or incomplete drying. Portable, needing only a power outlet and 35 cu. ft. of space, Megatherm presents no installation problems, and since it is readily adapted to existing textile plant equipment, Megatherm requires little alteration of existing plant facilities.

Small-Diameter Fluorescent Lamps

A new line of four small-diameter fluorescent lamps, the longest unit measuring only one inch in diameter and nearly eight feet in length, was announced recently at Nela Park Headquarters of General Electric's lamp department, Nela Park, Cleveland, Ohio.

Also included in the new line, called the "General Electric Slimline Mazda Fluorescent Lamps," are two ¾-in. diameter sizes, one approximately 3½ ft. long, the other slightly more than 5 ft. in length, and another 1-in. in diameter and aproximately 6 ft. long.

Addition of this "slimline" to the present line of G-E Mazda F lamps will, it is believed, provide commerce, industry, lighting equipment manufacturers, and architects with the tools necessary to satisfy almost every lighting need in these two fields.

Diameters of the two longest lamps in the new slimline are each approximately one-half those of the popular 40-watt and 5-ft. 100-watt sizes, respectively, in the present G-E lamp line. While war participation continues, G. E. lamp department officials

point out, that they are announcing preliminary information on the new F-lamp line at this time to help mills in planning for the time when priority limitations are lifted.

Semi-Automatic Moisture Tester

Designed to read directly in percent moisture loss, is a moisture tester recently introduced by Brabenden Corp., Rochelle Park, N. J.

It is stated that this tester eliminates calculations, as moisture loss of samples ranging from 0.1% to 100% moisture may be obtained by simply pushing down on a lever. The tester will hold up to ten samples. It is not necessary, when using this tester, to record tare weight of each dish for holding the sample as specialty calibrated dishes are available. Weighings are made with the samples in the tester. Samples, previous to testing, are first weighed on a special scale, shown in the illustration, that has an accuracy of plus/minus .002 grains. Rate-of-drying curves to determine true moisture content of the material and to find the highest temperature and shortest drying time may be plotted from the readings obtained. An adustable thermo-regulator with a temperature range of from 45° C. to 160° C. permits such charts to be plotted.

The instrument can be used either on exactly 10 gram samples, and in that case the moisture loss can be read directly in percent from the illuminated dial, or it can be used on samples of any other weight up to 10 grams. This latter use includes yarn samples where the mills are interested in the dry weight, in order to determine whether or not they are spinning the correct yarn. For such use a yarn sample of a definite yardage and having a definite dry weight is used. If when tested it has more or less dry weight, then the operator can adjust his spinning machinery immediately. For the latter purpose the instrument can be used directly in the mill next to the spinning machinery.

For the bulk of textiles, drying time is reported to be 25 to 30 min. One or more samples can be replaced without interfering with the accuracy of the results. The instrument is 16 in. in diameter and 34 in. high. Two types are available: a forced-draft machine for high moisture content where low temperature must be maintained, and a direct heat type suitable for most textile uses. The instrument operates on 110v., 60 cycles, a.c. current.

Conversion tables may be obtained to show the loss of weight, weight of sample, and percent of regain of sample tested.

Semi-automatic moisture tester designed to read directly in percent loss (Brabenden)

Useful Accessories in Textile Mills

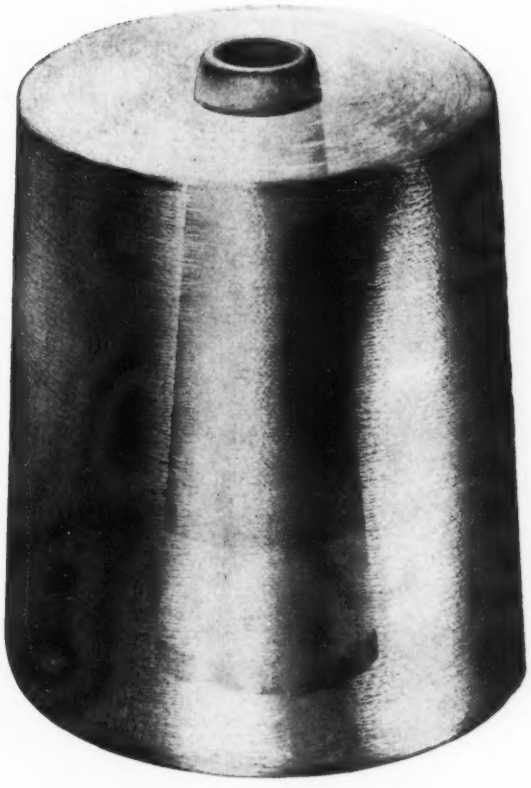
Air-operated controllers, Model 93 series, are being built by The Bristol Co., Waterbury 91, Conn., for controlling temperature, pressure, vacuum, liquid level, and humidity. These controllers have a throttling range from ½ to 15% with the adjusting mechanism arranged so that changes in the throttling range can be made by the user without the need of tools. These types of controllers may be used on drying ovens and for the control of steam pressure.

A small variable-speed drive, developed for drives up to 1-hp., has been announced by The American Pulley Co., 4200 Wissahickon Ave., Philadelphia 29, Pa. The remote control operates through a flexible shaft which permits operation of the unit from various locations. This American Speed-Jack utilizes V-belts to provide stepless control of speed through a 3-to-1 ratio.

No-slip floor and deck covering, known as Saf-T-Dek, is being manufactured by Truscon Laboratories, Detroit 11, Mich. This material consists of a heavy plastic containing a non-slip element and may be applied with a trowel to form a heavy layer of 1/32-in. thick. The material dries to a hard, tough film and may be applied to wood, concrete or masonry. The rough, non-slip surface formed is fire-resistant, weatherproof, and is non-skid either wet, dry or oily.

Payroll calculator, known as Wage Master, is being offered by Wage-Master Co., 1751 Belmont Ave., Chicago 13, Ill. This calculator automatically computes any wage-hour payroll and provides the operator with wages at straight line, premium wages, and wages at time-and-a-half on all over

THE PERFECT YARN PACKAGE



For fine counts cotton and rayon

on the VELVET BANDED CONE

The Sonoco Velvet Banded Cone is a product of evolution from the original all-velvet surface originated more than twenty years ago. It accomplishes two things: (1) the tension surface required for an even primary winding which is always the foundation for building a perfectly wound cone, and (2) the smooth inbetween surface that insures even delivery to the last inch of yarn.

DON'T WASTE PAPER
SAVE
WASTE PAPER

SONOCO MAKES *EVERYTHING*
IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT | HARTSVILLE S. C. | MYSTIC CONN.

sonoco
SERVES THE WORLD
PAPER CARRIERS

DEPENDABLE SOURCE OF SUPPLY

40 hr., and total wages earned. Pay rates range from $0.30 to $2.12½ per hr. and 0.1 hr. to 64.9 hr.

A portable dust collector, known as Dustex, designed for use about the machine shop for collecting air containing obnoxious dusts, lint, shavings, grindings, etc., is being built by Dust Filter Co., 4418 N. Clark St. Chicago 40. The unit maintains a static air suction of more than 4 in. at velocity of over 5,000 IFM. The unit is available in several different sizes.

TO KEEP 'EM RUNNING

Avoiding Cracks When Metallizing

In building up shafts, loom crankshafts, drawing rolls, etc., with sprayed metal, according to "Shop Kinks" appearing in the May-June issue of *Metco News*, published by Metallizing Engineering Co., there are several factors which influence the tendency to crack. If these factors are all taken into account, it is almost invariably possible to alter the procedures of preparation and spraying so as to eliminate cracking.

Preparation. The stronger the bond to the base material, the better. A poor bond permits stress concentrations in the coating which frequently results in cracking, although other conditions are ideal.

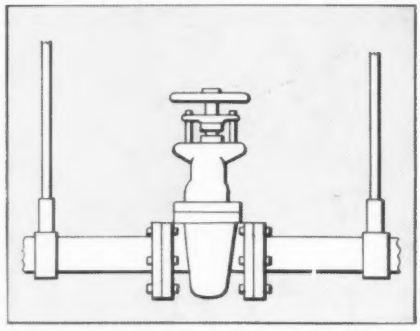
Heavy sections. The stresses developed in the coating increase with the thickness of the coating. So, presumably, does the ability of the coating to withstand these stresses, due to greater thickness; however, as the forces increase, the restraining influence of the bond to the base material does not increase in proportion. Stepping down the ends of the undercut section, where cracks invariably start, tends to reduce the stresses at the ends, and to reduce the danger of cracking. The Metco method of preparation, or a coarse Fuse-Bond is recommended for all heavy sections.

Distance from nozzle to work. The stresses developed in the coating are, with reasonable limits, inversely proportional to the distance between the gun and the work. Hence, if the gun is too close to the work, almost all the particles strike the surface in a molten state, and the stresses are high. On the other hand, the deposit resulting from too great a spraying distance is very weak and brittle, and may not machine properly or resist wear satisfactorily. Five to six inches distance between the nozzle and the work have proven the most satisfactory compromise for the average work with steel. This distance may be slightly increased where danger of cracking exists, or it may be decreased where there is no danger of cracking, and exceptionally good finish is required.

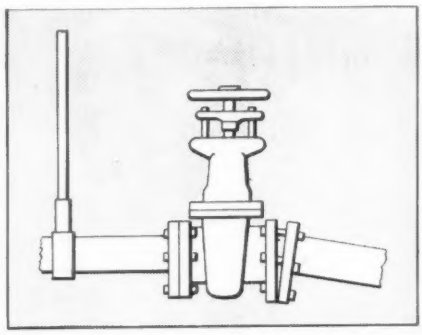
Texture of coating. In sprayed metals, especially the hard metals, ductility is of course extremely low. In attempting

PROTECT YOUR VALVES

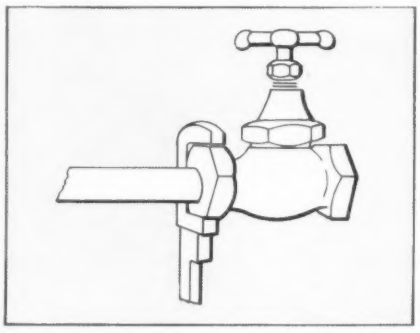
Valves used in the dyehouses and the finishing plants of textile mills are subject to wear and replacement. A number of illustrations shown are taken from a poster issued by Reading-Pratt & Cady, a division of American Chain & Cable Co., which illustrates how to protect your valves.



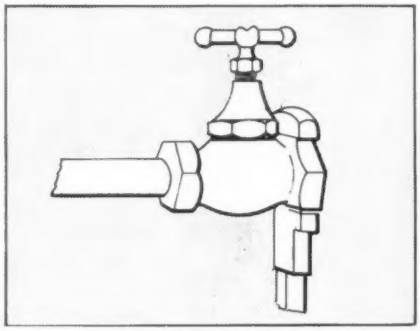
***Do** use proper supports and expansion bends This relieves undue weight on the valve.*



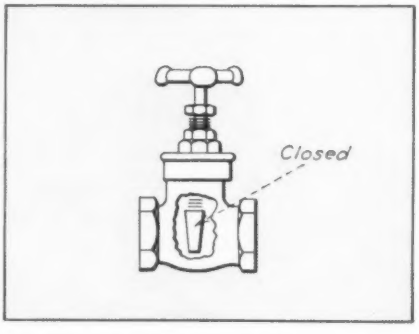
***Don't** install a valve so that it will carry the weight, sag, or expansion of the line.*



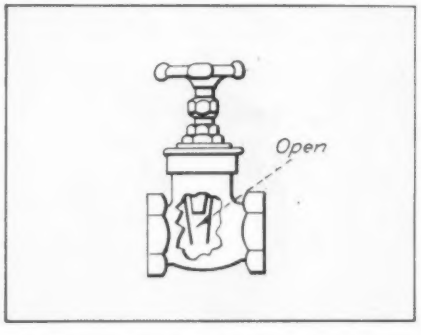
***Do** use your wrench on the hex near the joint. This gives support to the valve.*



***Don't** use a wrench on the hex away from the joint. A twisted body may be the result.*



***Do** install the valve in the closed position. The chance of twisting it is lessened.*



***Don't** install a valve while it is in the open position. This is an important DON'T.*

Thanks to Loyal Cooperation

United in the common cause of once again establishing peace in the world, every business enterprise has had a definite responsibility and a sacrificial part in the pursuit of war. All of us, through mandatory action, have been diverted from our peacetime pursuits. We of Kaumagraph have been called upon to devote 85% of our productive capacity to the needs of the Armed Forces, both directly and through contractors to the government.

In the continuing period of labor and material scarcity, it has not been possible for us to expand our production to satisfy the requirements for Kaumagraph Products for civilian use as promptly as we would have liked. Nevertheless, thanks to the loyal and understanding cooperation of most of our customers in anticipating their needs for many weeks ahead, we have been able to meet all reasonable demands.

While we are not permitted to reveal the nature of most of our war production, we want our customers for civilian needs, to know that their cooperation, their patience and their forbearance represent a real contribution to the cause of peace for which we express our earnest thanks.

Even now, the dark shadows of war are shortening and we may look forward to the resumption of peacetime business. Through the integrity of our products, through the service we perform, we hope that we may continue to merit your patronage, good-will and confidence.

Frederick Maurer

PRESIDENT

Identification Headquarters since 1902

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to obtain an extremely fine coating, many operators slow the wire feed down too much and produce a coating which is excessively oxidized. Such coatings are more brittle than those applied at high speeds.

Expansion of base material. Part of the stress to which the coating is subjected is due to expansion of the base material resulting from the temperature rise due to the spraying operation. This stress may be reduced by (a) periodic interruption of the spray to permit cooling, (b) an air blast on the work, or (c) pre-heating the base material to a temperature approximately equal to the maximum temperature it would be expected to reach during the spraying operation. This last method is probably the most effective, and should always be used where a heavy build-up of steel or stainless steel is required on a bronze shaft or bushing over 1-in. dia. Care should be taken in applying the heat, since rapid heating, or heating carried to an excess, will result in oxidation of the surface of the base material. About 350° F. is a safe maximum for almost all materials.

Rapid cooling. After the spraying is completed, the work should be allowed to cool normally in air. While the temperatures involved are not sufficiently high to expect much normalizing of stresses to occur during cooling, tests have shown that even a strong air blast may cause cracking. If it is necessary to cool the work after spraying, it should be rotated while the air blast is directed against it.

Hints on Materials-Handling in the Storehouse

Mills that have powered materials handling equipment may find the followings hints, which appeared in a recent issue of *Handling Materials*, published by Towmotor Corp., of value.

Use of the "wedge" idea has proved extremely valuable in warehousing of light cartons, bolts of cloth, or similar soft material that tends to settle under pressure.

A series of four ¼-in. or ½-in. boards

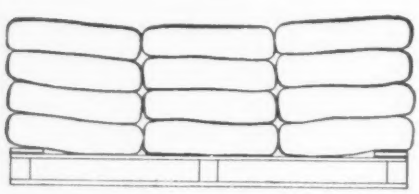


Fig. 1. Boards are laid around the sides of pallet before stacking.

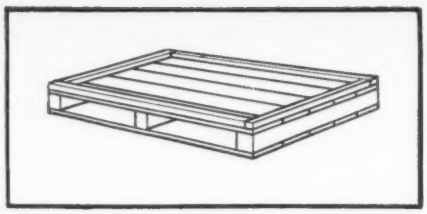


Fig. 2. Same results are achieved by constructing pallet with molding around edges.

of one to two inches in width are laid around the four sides of each pallet before the containers are stacked thereon, as shown in Fig. 1. This tends to make the outside units "lean in" toward the center of the load, rather than outward. This method is effective in eliminating the tendency of individual containers to fall out of the stack. Handling of the pallets with forks subjects the load to shocks which might upset the stack.

Sometimes the same effect is achieved by building the pallets with ¼-in. or ½-in. molding around the outside edges of the upper deck, as in Fig. 2. This is done only where the pallets are used for sack-handling operations exclusively.

PRODUCTS & PROCESSES

Germicide and Fungicide

PERM-ASEPTIC; Ramped Chemical Co., 140 E. Third St., Mount Vernon, N. Y.

Perm-Aseptic - Ramplex is described as both a germicide and fungicide. It has been tested and adopted by a large textile mill in preventing spot dyeing in wools caused by bacterial action, according to the manufacturer who claims that for mildew-proofing it passes the requirements of the Philadelphia Quartermasters Corps, T-1212 specification by the United States Corps of Engineers and also the performance tests of their T-1452 F-1 for tensile strength after exposure to mildew-producing conditions.

As it is not a copper compound, Perm-Aseptic-Ramplex does not leave any copper deposit on the fabric. It is colorless, odorless, and non-toxic under conditions of use. Its lack of irritation to the skin can be realized when it is known that 6,500,000 diapers a week are rinsed with it.

Rot-Proofing Process

EMYCEL SYSTEM; Roxalin Flexible Finishes, Inc., Elizabeth, N. J.

Fungi deterioration control of aircraft fabrics following principles embodied in the method described by Navy specifications have been available for some time in the Emycel Fabric Finishing System, owned through a patent held by Roxalin Flexible Finishes, Inc. (Patent No. 2330998). This corporation recently announced that free licenses for the use of the system are being granted on request by aircraft manufacturers required by the Navy to employ this process.

It is claimed that fabrics which previously had to be renewed after four months showed no deterioration due to fungi after more than a year in tropical service.

Postwar uses of the process are seen in preserving the fabric of coated cloths.

Durable Repellent

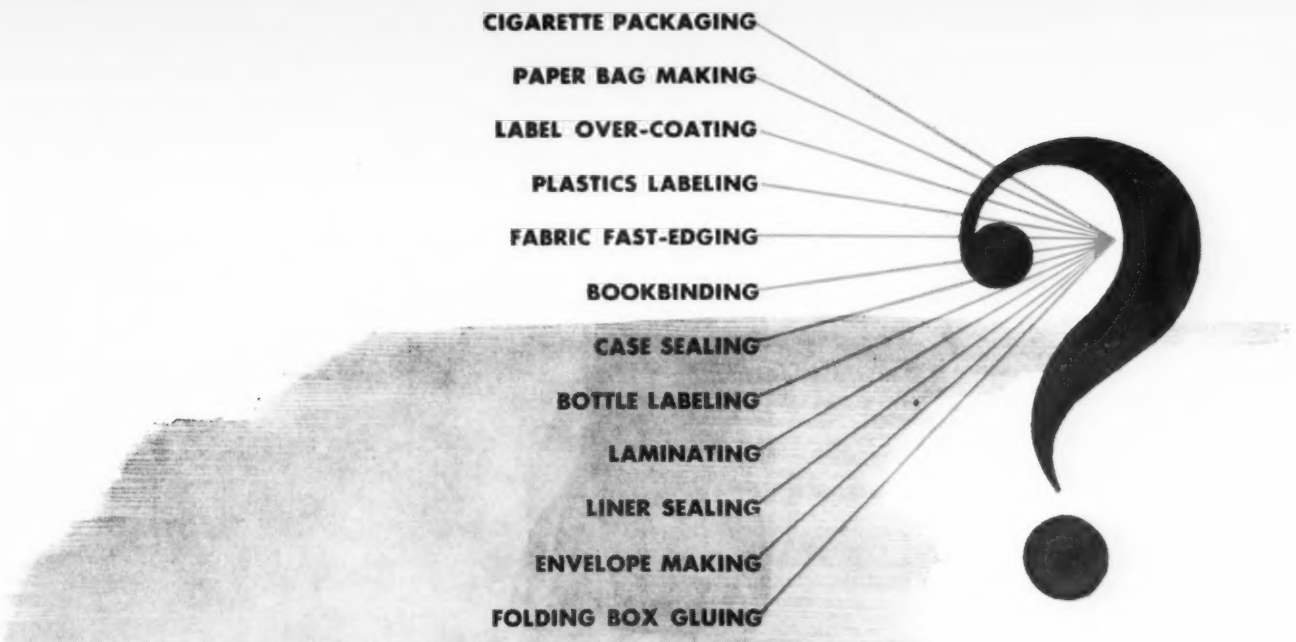
DOLANIZE; The Dolanize Co., 815 East 139th Street, New York, N. Y.

This product is offered as one of the durable water-repellent finishes and is said to be one of the few which has been accepted by the U. S. Army Quartermaster Corps as being satisfactory for impregnating uniform fabrics.

It is applied to the cloth as a water-in-oil emulsion, slightly on the alkaline side, and requires drying and curing in order to obtain satisfactory durability.

The manufacturer states that it is not necessary, however, to wash the goods after the curing operation, though this may be desirable on some fabrics to improve the "hand" and remove traces of surface material.

The manufacturer states that it is necessary, however, to wash the goods after the curing operation, though this may be desirable on some fabrics to improve the "hand" and remove traces of surface material.



is the answer a Resin adhesive

Experience shows that many amazing developments have resulted from the application of Resin Adhesives to packaging, converting and assembling operations previously thought to be at their highest level of efficiency.

In bookbinding, for example, a resin adhesive has eliminated the age-old production bottleneck of drying speed: It is now possible to glue-off, then round and back books in 20 minutes instead of 3 to 4 hours. In packaging, a resin adhesive is giving important new moisture protection to cigarettes. In specialty bag making, a resin adhesive makes it possible to safely ship coal, asphalt, fertilizer and many other products in less expensive, more convenient containers.

Note this carefully ... at National the solution of any adhesive problem is not limited to formulations of a single type or a limited group of resins. All types, both singly and in blends of high complexity, are employed. *And each recommendation of a resin product must justify itself competitively with every other type of adhesive.*

You can safely rely on National ... a specialist for half a century in all types of industrial adhesives and a pioneer in the development of synthetic resin adhesives ... to engineer the one exact bonding agent to your specific job. Inquiries are invited – NOW!

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national ADHESIVES

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Kinks AND SHORT-CUTS

A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Your identity will not be published unless you give permission.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ THIS MONTH'S PRIZE WINNER

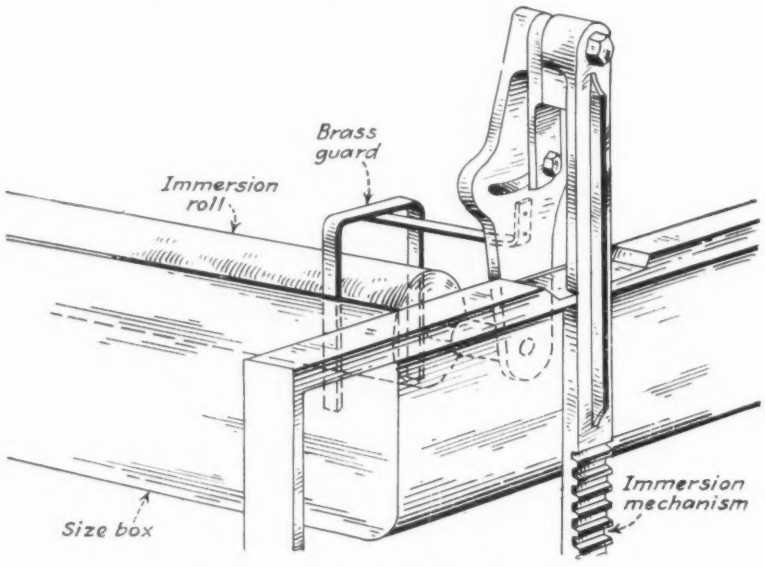
Brass Fork Serves Double Purpose on Slasher

When slashing cotton, spun rayon, and filament yarn there is danger of the edge (selvage) yarns running off the end of the immersion roll, since it is normally desirable to spread the yarn being sized as wide as possible. There is also a danger of lowering the immersion roll too deeply into the box, in an effort to get as good size penetration as possible.

These two dangers can be avoided by using the brass fork shown in the illustration. It serves two purposes: (1) It prevents yarn from running off the end of the roller, and (2) it keeps the roller from coming in contact with the bottom of the box.

I have seen this device in use for several years and it has practically eliminated "stuck selvages" caused by yarn running off the edge of the roll.

The fork is made of a piece of brass 1-in. wide by ¼-in. thick. Brass was chosen since it will not rust. The fork is welded to a cross-piece which is bolted to the immersion roll arm as can be seen in the illustration. (K-271) Glenn U. McDonald, Greensboro, N. C.



This brass guard should last indefinitely.

Shuttle-Stop Pin Keeps Looms from Banging Off

We are running a few looms on handkerchiefs, scarfs, and table-cloths, and in our designs there is a shuttle that has to make a few picks every two thousand picks or more. At the beginning, we had trouble with these qualities. The looms were banging-off once in a while when that special shuttle was indicated. This shuttle was moving forward in its box while the other shuttles were running; and when its turn came, it was not in position and the loom would hang off.

So, we have arranged the little "shuttle stop" shown and our looms are running perfectly now.

To make this shuttle stop, first drill

CROCKER-WHEELER MOTORS for TEXTILE MILLS

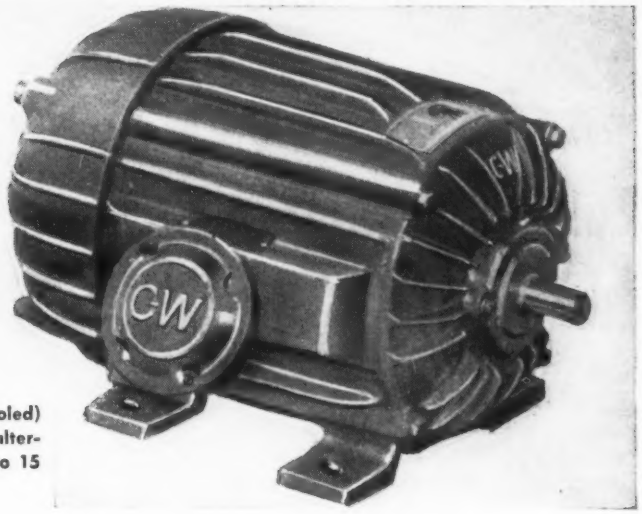
FEATURES

1. Totally Enclosed Cowl-Cooled type minimizes fire hazard, resists corrosion. Protects against acid or alkali fumes, splashing or dripping corrosive liquids, air-borne moisture, steam, corrosive gases, conducting dusts, metallic chips, lint, etc.

2. Fin Type single shell construction, with all surfaces exposed and a readily removable fan shroud, gives non-clog ventilation. Easy to clean...foreign matter passes over the surfaces of and not through the motor.

3. Patented GROOVSEAL antifriction bearings — no greasing needed for at least a year — minimizes maintenance. Seal permits use of softer grease, for better lubrication and longer bearing life. Water-tight — Dust-tight — Air-tight.

4. Vacuum Impregnation with high grade insulating varnish seals out foreign matter and moisture from each individual coil...makes windings a homogenous mass... reduces hot-spot temperature and lengthens insulation life. Adherence of varnish prevents vibration of wires inside or outside of slot.



SEALEDPOWER (Cowl-Cooled) Motor...for all polyphase alternating current circuits, 2 to 15 h.p. NEMA Dimensioned.

SEALEDPOWER...Industry's Most Trouble-Free Motor...*because*

THE TEXTILE INDUSTRY has many processes where open type motor drives are unsuitable, the hazards of which are largely eliminated by this totally enclosed **SEALEDPOWER** Motor.

The design of the motor protects it against steam, drip, splash, acid, fumes and corrosion in wet processing in the Dye House, Bleachery and Finishing...also against dirt, lint and fire hazards of all preparatory machinery operations.

Crocker-Wheeler, one of the leading manufacturers in the field, specializes solely in the design, manufacture and application of electric power equipment.

As power specialists, Crocker-Wheeler field engineers know the power needs for your industry — of your particular production processes.

Call in one of our experienced engineers for specific advice on motors, generators, couplings and control... no obligation.

CROCKER WHEELER Motors Generators

JOSHUA HENDY IRON WORKS

CROCKER-WHEELER DIVISION

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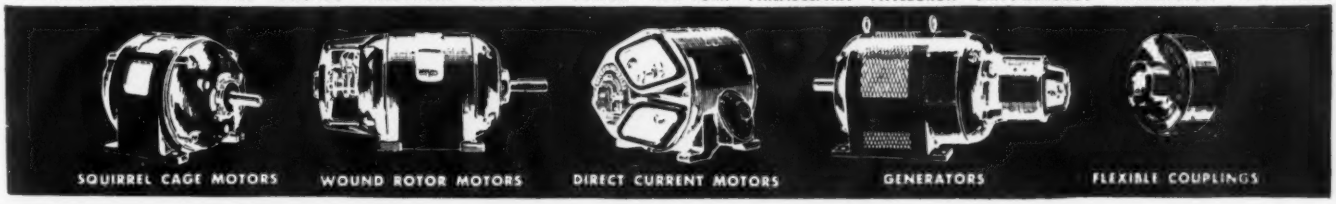
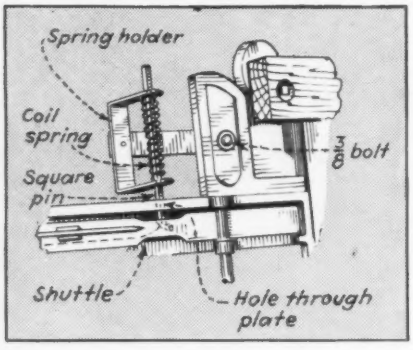


KINKS & SHORT-CUTS

(Continued from page 130)



Holder is made of 1¼-in. by ⅛-in. flat iron.

a hole ½ in. on the top of the shuttle box right at the point of the shuttle when in proper position. Then make a holder like the one in the sketch and fit in a pin ¼ in. or ⅜ in. square with one end flattened like a screw driver. Adjust the pin so that this flat end stops the shuttle through the hole on the top when the box is up. The idea of putting a coil spring in the pin is to prevent damage to the shuttle (or locking the box) if the shuttle is in a wrong position.

The same arrangement can be used for the bottom cell of the box, if necessary. *(K-226)*

Dropped-Harness Defects Prevented by Attachment

The accompanying sketch shows an attachment which we are using successfully in preventing defects from dropped shafts; it stops the loom on the first or second pick after a harness drops.

It is inexpensive to make, as the materials consist only of a few feet of insulated wire, a couple of blocks of wood (old picker sticks), old jack wires, and cord.

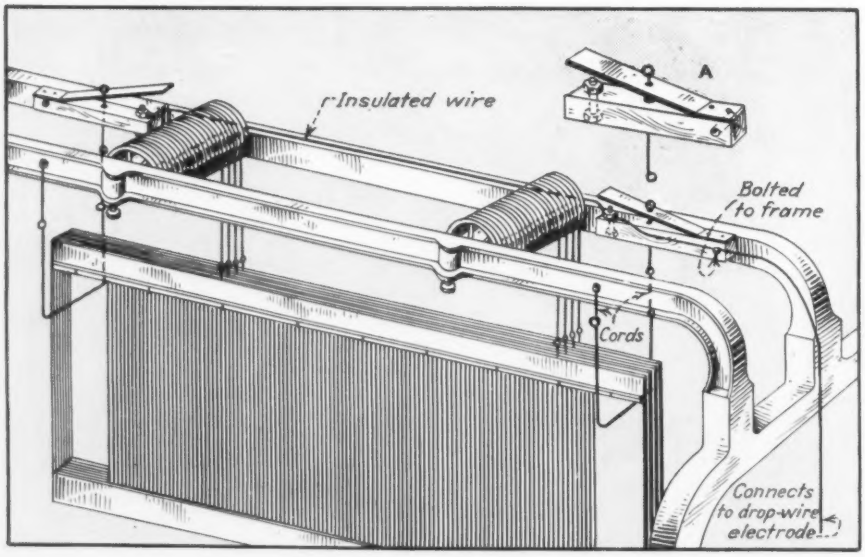
The illustration A shows a picker stick cut off near the butt, about 6-in. long, with three holes bored through, two of them edgewise (one for the contact bolt and the other for the spring wire to work through, both $\frac{5}{16}$-in.). The other hole is drilled through the flat side to bolt to the arch of the loom. We use $\frac{3}{8}$-in. bolt for this.

The spring is made of box-banding and is fastened to the top of the block with two small screws. Another hole is punched in the spring for the jack wire to go through, and a small loop is made of the jack wire to act as a head to pull the spring down. Another hook or loop is made to fasten the adjustable cord which connects, in turn, to another jack wire bent to go under the tops of the harness as shown in the main part of the illustration.

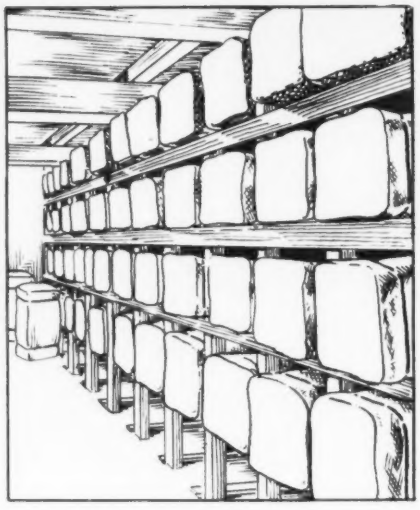
An insulated wire is connected to a drop-wire terminal. It is run up along the inside of the front arch, connects to the contact bolt on the first block, and then is run on across the arch to the contact bolt on the opposite side of the loom.

The spring on top of the block is grounded to the frame of the loom by folding the spring over and squeezing the end between the block and loom.

When the shaft drops, it rests on the wire underneath the harness which pulls the spring down. This closes the contact, which acts just as the drop-wires do to actuate the drop-wire mechanism. *(K-258)*



Harness stop motion designed for loom with electrically operated drop-wires.



A bale rack such as this can be used for storing incoming staple and outgoing cloth.

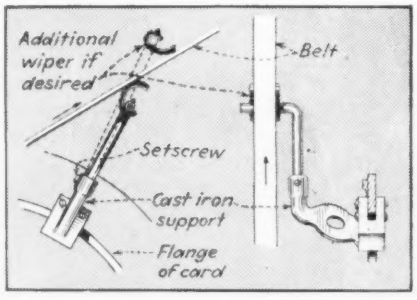
Rack Helps in Getting Bale That is Needed

The rack, such as shown in the accompanying illustration, was sketched from an actual warehouse of a prominent southern mill. The sketch shows how this mill solved the problem of getting to the bale it needed. The racks are used for storing both incoming bales of staple and outgoing bales of cloth. Of course, a mechanical stacker is needed. *(K-200)*

Belt Wiper for Card Made From Tire Tread

The arrangement shown is placed on the side of a card to wipe the contact side of the driving belt. It consists of a piece of bent rod about ¾ in. in diameter, held to the frame by a cast-iron support which is bolted to the card. The rod is secured with a set screw. To the upper end of the rod is riveted a small section of an old tire-tread. It is held in contact with the belt so that the rubber section of the tread constantly brushes the belt as it passes.

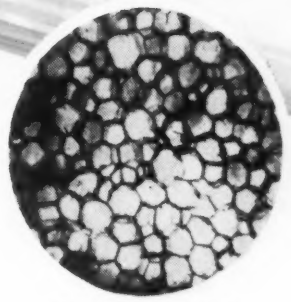
This device can be adjusted to the position required for a cross belt by



Belt wipers can be used on both sides if desired.

UNIFORM DRAFTING

. . . because cork's cells prevent "slicking up"



Cork's cell structure magnified 125 times

CORK'S unique cellular structure enables Armstrong's Cork Cots to draft uniformly throughout their long service life. Every cubic inch of cork contains more than two hundred million air-filled cells. When Armstrong's Cork Cots are buffed, the external cells are opened, forming the highly frictional surface necessary for proper drafting. Armstrong's Cork Cots never lose this good grip—never "slick up"—because, as the surface cells are worn down during operation, new ones are continually being exposed.

Other Advantages of Cork

The excellent grip of Armstrong's Cork Cots also eliminates eyebrowing. These cots produce the least clearer waste—and place it back on the clearer boards where it belongs, reducing the number of slubs in the yarn.

Cork's air-filled cells also provide Armstrong's Cork Cots with excellent resistance to "creasing" by hard ends. When a hard end runs through the rolls, the air in the cells compresses. As the pressure is released, the cells expand quickly toward normal size.

Rebuffing Adds Extra Service Lives

Armstrong's Cork Cots have a long initial service life. When they do show signs of wear, they can be rebuffed to give you three or four extra full-length service lives. Each rebuffing costs as little as ½¢ per roll.

For samples and prices of Armstrong's Cork Cots, write Armstrong Cork Co., Textile Products Department, 8301 Arch Street, Lancaster, Pennsylvania.

BETTER RUNNING WORK

— MORE POUNDAGE

ARMSTRONG'S CORK COTS

ACCOTEX COTS • ACCOTEX APRONS

KINKS & SHORT-CUTS

(Continued from page 132)

simply twisting the rod in the support. It can also be arranged to wipe both surfaces of the belt by having two rods supported in the same stanchion, or cast-iron support, as indicated by dotted lines. *(K-221)*

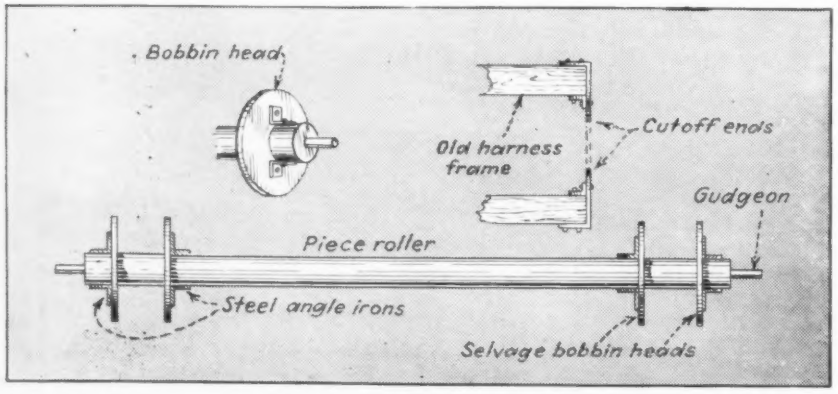
Roller Selvage Beams Insure Uniform Tension

The sketch shows a method of placing two or more selvages onto one roller so the weave will have the same take-up. This method is best adapted for weaves having heavy selvages of several hundred ends each, and when the selvage weave is one or more inches in width.

By using a regular piece roller with gudgeons on each end and a pair of selvage bobbins, the gadget is easily made up. Cut the large selvage bobbin heads off and cut out their centers so they will fit snugly over the roller. Two such heads are placed at each end of the roller in position where the selvages should normally be run on the loom.

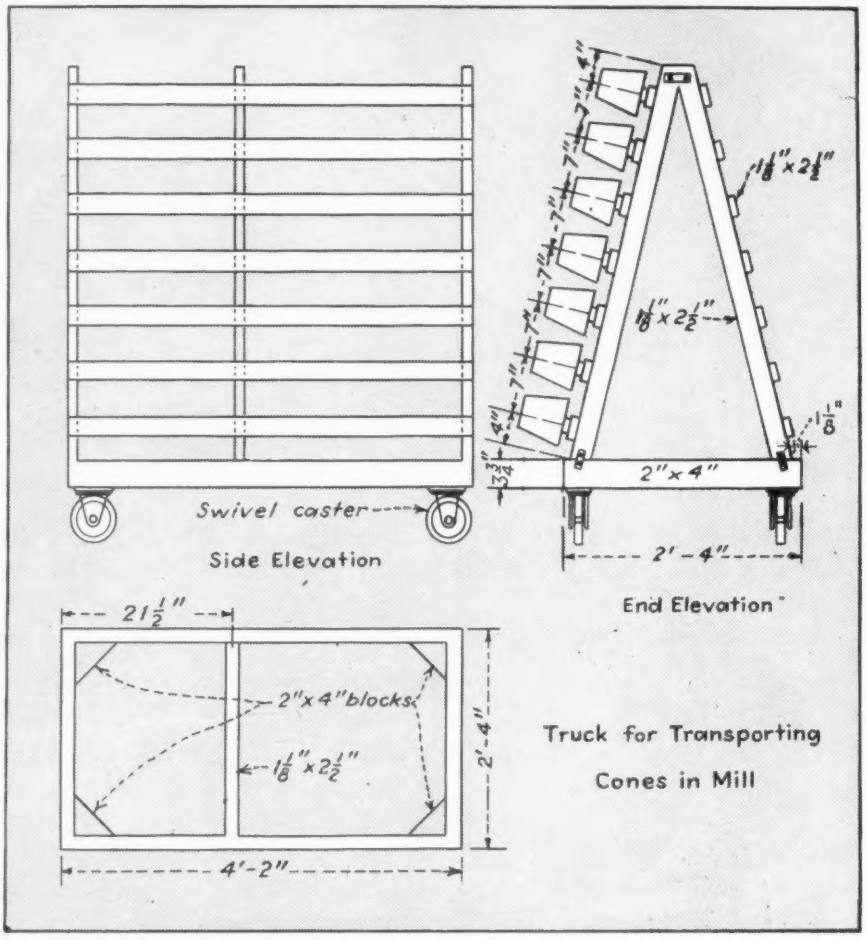
By using the steel ribbons from discarded harness shafts (two for each bobbin head), the heads are secured firmly in place and kept from moving apart. The roller should be filled with sufficient selvage yarn to run out a warp.

Proper tensioning is secured by using sash cord wrapped two or more times around the roller and weighted as necessary. With same tension on each side, selvages can be controlled better to prevent baggy or tight edges. The roller is mounted behind the whiproll or beneath the warp, where selvage bobbins are usually mounted. *(K-192)*



The heads of this selvage roller can be moved to any desired width.

Cone Truck Solved Mill's Tray Shortage



Dimensions given are for truck holding 98 cones.

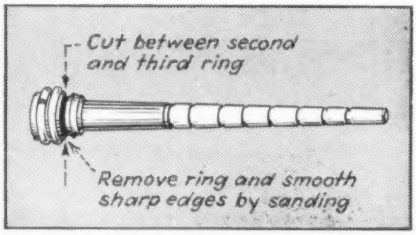
We have found the cone truck illustrated meets our requirements for handling over-tinted cones to be taken to the winding department. We built the truck since we were unable to buy trays. The truck we designed will hold 98 cones or one case with one loading. When the cones are dipped in tint, they are placed on cone truck. This way we have our tinting done in one section and no trays are needed. This truck can also be used for creeling in warpers. It has solved a tray shortage in our plant. *(K-223)*

Old Bobbins Converted For New Kind of Work

This method of converting damaged and discarded bobbins into a useful form offers substantial savings to weaving mills having shuttle-changing looms with the proper feeler, and might be a method for using idle bobbins.

The bobbin-changing bobbin (quill) has three metal rings around the base as shown. Occasionally one or more rings may work loose, and the bobbin becomes a discard. Or it may be discarded for many other reasons. In time, if these bobbins are stored, they make a sizable collection.

To convert these discards so they



Bobbins from bobbin-changing looms can sometimes be reused on shuttle-changers.

Syzon

FOR SIZING NYLON YARN

Literally, when life hangs by a thread, SYZON makes a vital contribution. Parachute cloth woven from warps sized with Sonneborn's SYZON meets all specifications of the Armed Forces. Best results are obtained when SYZON is used right on the slasher.

COMPLETE VICTORY COMES FIRST ★ ★ ★

but when Nylons come back, remember SYZON, too. Ideal for sizing yarn for full-fashioned and circular knit hosiery.

Syzon Advantages . . .

Easy Application · Superior Knitability · Adjustable to Varying Humidity and Temperature Conditions · Improved Boil-Off

There is a specific SYZON formula available to meet every problem of warp sizing. Trained field specialists who know your problems are available for consultation. Working samples will be sent promptly upon request.

TEXTILE CHEMICALS DIVISION

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Plant and Laboratories: NUTLEY, N. J. • Refineries: PETROLIA and FRANKLIN, PA.

KINKS & SHORT-CUTS

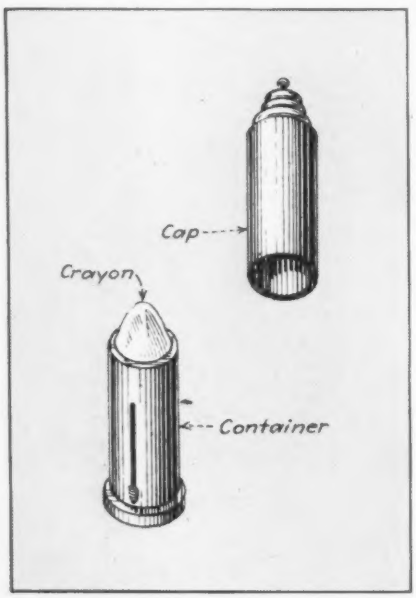
(Continued from page 134)

can be used on shuttle-changing looms, cut the rear end off between the second and third rings from the base. Remove the one remaining ring—a light tap with a riveting hammer usually is sufficient to free it. Smooth the rough edges on a sanding wheel, and the bobbin is ready to go back into service.

Five hundred reconverted bobbins will be sufficient for approximately ten looms. In a large weave shed, that many looms can often be kept running on bobbins usually thrown away. (K-247)

Containers For Crayon Keeps Pockets Cleaner

Empty lipstick-containers can be put to good use in weaving mills that use washable cloth crayon. There are two types of these containers. One type is made with a sliding cup and the other type has a spiral cup. To fill such a container, remove the wrapper



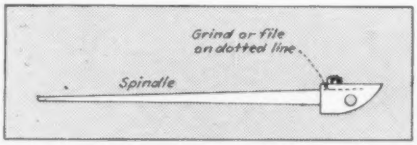
Old lipstick container used to house textile crayon.

from the crayon and insert it into the base of the cup. Working the cup in and out several times will free all excess crayon.

One filling should last much longer than the same amount carried loosely. This arrangement is much less messy than carrying the crayon in one's pockets. (K-245)

Grind Base of Spindle If Screw Is too Short

A simple trick in making use of shuttle spindles on S-3 and S-4 looms when the height screw is too short from wear or damage is to grind off



Some shuttle spindles can be salvaged by grinding base as shown in dotted line.

the back along the dotted lines as shown in the illustration.

Fixers usually discard the spindle or place in longer screws. If the spindles are ground down previous to placing in shuttles, plenty of length is obtained to allow the adjusting screw nut to be kept firmly tightened. (K-237)

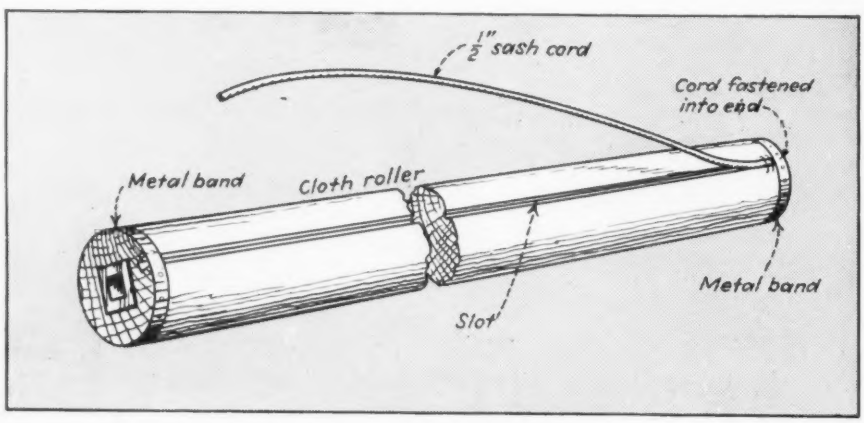
Cord Replaces Stick And Cannot Be Lost

Keeping the small cloth-fastening stick on piece rollers coming from the cloth-inspection room is often a problem. However, making use of cotton sash-cord of correct diameter will solve this problem.

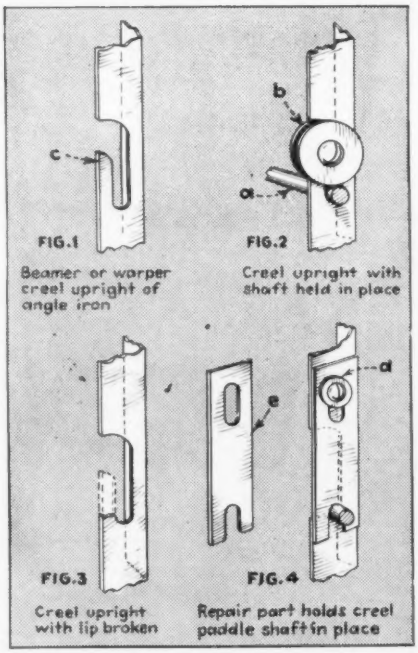
Removable piece rollers, shown in the sketch, are removed from the loom when the piece is cut off to be transported to the inspecting room. After the cloth is unwound from this roller, the stick (which is approximately ½ in. by ½ the length of the roller) is loose and even though placed into the stick slot, will often become broken or lost. When an empty roller is placed on the loom, lost time results in searching for a stick to hold the cloth in place.

As shown in the sketch, the wood strip can be dispensed with and a suitable length of sash cord used instead. The one end of the cord is stapled into the strip slot. When the cloth is removed, the cord remains attached to the roller and cannot be lost. Use a sash cord that will require a little force to squeeze it into the slot.

This same kink can also be used on looms without removable takeup rollers, as the strips of wood are occasionally broken at the looms. (K-190)



Cord, replacing stick, cannot become lost from its cloth roller.



Warper Creel Repair

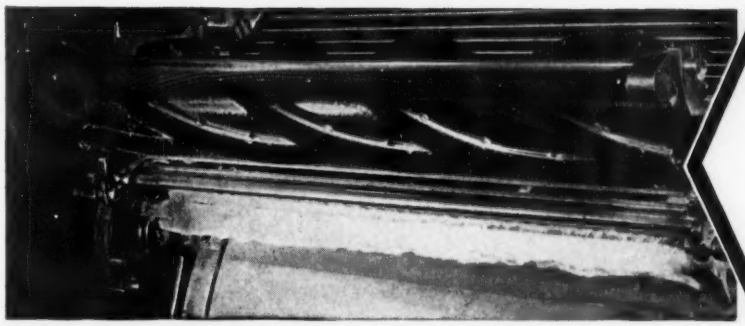
Fig. 1 shows a short section of the angle-iron forming the upright of certain warper and beamer creels, while Fig. 2 shows the creel paddle shaft a in place held by a ½-in. stove bolt with two washers b, one on either side of the lip c. Sometimes this lip is broken off, thus leaving nothing to which the washers may be fastened, as in Fig. 3. This is overcome by drilling a hole d in the upright and employing the repair part e as shown in Fig. 4. (K-219)

"FULLERGRIPT" is the Fuller Brush Company's patented method of gripping brush materials in a rust-resisting metal backing. The machine-controlled placing of materials in the metal backing results in a uniformly solid brush face, which can be fastened onto metal cores, or arbors. The density of the brush and the durability of the holding method means long life, better performance and serviceability.

All types of Brushes, Machine or Hand, for Textile and Finishing Mills.

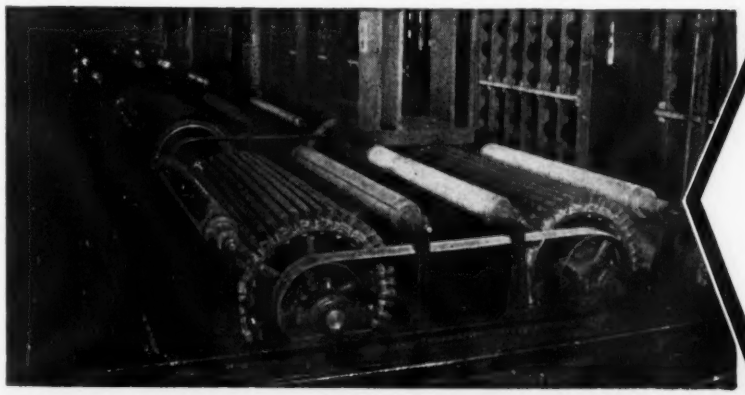
WORSTED-CARD BRUSHES

FULLERGRIPT Worsted Card Brushes, because of the densely packed brush materials, push the wool—*all* of the wool—down into the pins of the Morel clothing, leaving the burrs on top of the pins, free of fiber, ready for easy removal. (See cut.) Fullergript cylindrical brushes are proving helpful in three ways on worsted cards: As *feed roll brushes* to start the wool properly in the teeth of the first lickering; as *Morel brushes* to disentangle the burrs from the wool; as *transfer brushes* to carry the wool to the Morel roll and disentangle the burrs at the same time.



COTTON-FLAT CARD-BRUSHES

RIGID, metal-backed brush strips, pre-formed to the correct degree of spiral, can be easily attached to your present wood cores. The density of the brush with no gaps, prevents the accumulation of lint or lumps on your cards, and the stripper is cleaned more thoroughly. This means better carding.



THREAD DRESSERS

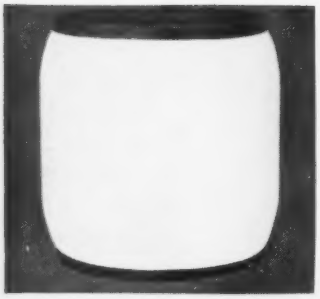
DISCARD wood lags with their variation in weight, warping, splitting, and falling tufts. Use Fullergript for better ventilation and increased production. Their are no gaps or tufts in Fullergript to allow threads to ride on the core. These brush strips are set in pairs equally spaced around the periphery of the spiders, and are easy to install. Their production life is longer because of the dense, massed bristle filling.

The FULLER BRUSH Company

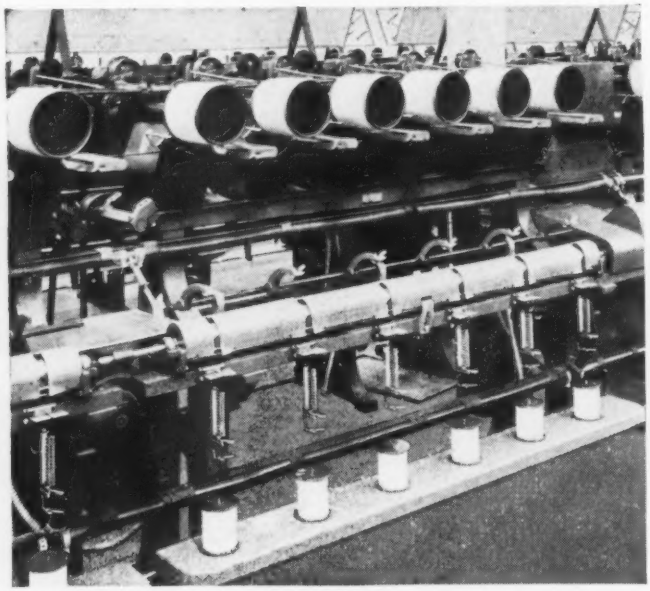
3594 MAIN ST., INDUSTRIAL DIVISION 8C, HARTFORD, CONN.

Handling Nylon with Kid Gloves to get Quality Cones

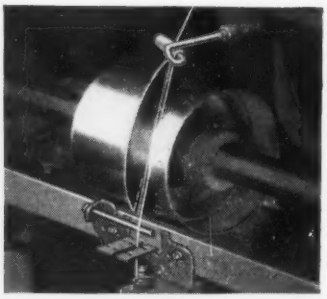
Sizing and coning Nylon by the Universal System results in cones that are ideal for knitting



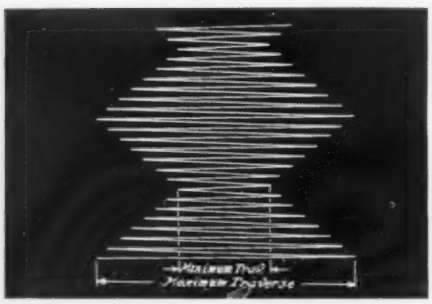
Universal Sizing Tube is designed for uniform, rapid drying and free yarn delivery. Use of four winds during each traverse limits yarn oscillation.



Tension *must* be uniform. The thin yarn layer on the sizing tube means minimum change in yarn takeup speed ... contact points on the No. 250 Sizing Machine are few ... yarn travel is nearly straight from supply to wound tube.

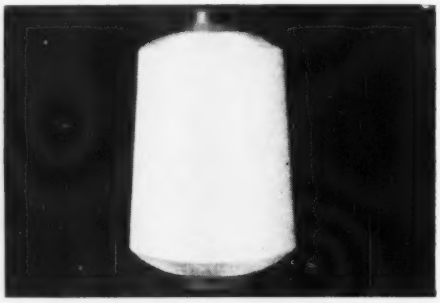


Percentage of size pick-up must be accurately controlled. This is easily accomplished by controlling the roll speed and the amount of yarn contact.



Yarn must be laid carefully on the sizing tube to permit free delivery when supplying yarn to the coning machine. The traverse is alternately lengthened and shortened to produce tapered selvedges.

Redraw is undesirable. The Universal Sizing Tube is used as a direct supply to the Universal No. 50 which also winds with minimum tension and accurately applies the desired amount of emulsion.



Universal Pineapple Cone, produced on the No. 50 Machine by the extremely simple Pineapple Coning Attachment with roller bail, is the ideal knitting cone for Nylon.

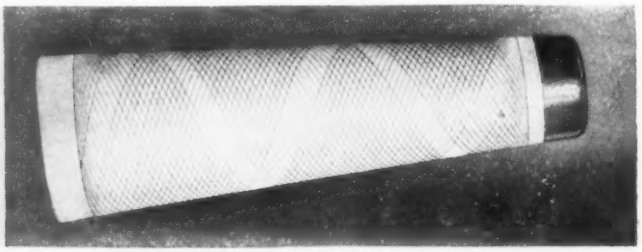
Universal Winding Company

Reg. U. S. Pat. Off.

LEESONA

PROVIDENCE
BOSTON
PHILADELPHIA
UTICA
CHARLOTTE
ATLANTA

MORE THAN 90% OF ALL SYNTHETIC FILAMENT YARN ON CONES IS PRECISE-WOUND ON THE FLEXIBLE 50



THE CHRONIC ABSENTEE

Should foremen excuse the past record of the chronic absentee when production is normal after the war or should he discipline the offender?

Pete & Bill

LETTERS TO PETE & BILL are paid for when published, without regard to length. We use letters (not over 200 words) discussing material in this department or any other pertinent matter. Suggestions for the Pete & Bill dialogue are also welcome and if used will be paid for. If these pages interest you, contribute something to them to interest others. Address PETE & BILL, Textile World, 330 West 42nd Street, New York 18, N. Y.

I'VE GOT THREE CHRONIC ABSENTEES THAT ARE GOING OUT OF HERE AS SOON AS THE WAR IS OVER.
NOW, BILL, TAKE IT EASY, AFTER ALL, IT'S ONLY HUMAN TO WANT TO BE OFF ONCE IN A WHILE
TIME CARD
1
OH YEAH! WELL IT'S NOT HUMAN TO STAY OUT THREE SATURDAYS IN A ROW. DON'T FORGET I'M HUMAN TOO. THEY'RE NOT GOING TO TREAT ME THAT WAY AND GET AWAY WITH IT.
I UNDERSTAND YOUR FEELINGS, BILL, BUT IF YOU HOLD A GRUDGE, YOU'LL HURT ONLY YOURSELF. IF YOU HANDLE THE OFFENDER UNDERSTANDINGLY, YOU'LL REALLY SELL YOURSELF TO ALL YOUR PEOPLE.
BULLETIN
BUY WAR BONDS
2
PETE, THESE GUYS EXPECT TO BE DISCIPLINED. IF I DON'T GET TOUGH THEY'LL THINK I'M WEAK, BUT I CAN'T AFFORD TO DO ANYTHING NOW BECAUSE I NEED THEIR PRODUCTION.
IF YOU NEED TO BE TOUGH, BILL DON'T WAIT UNTIL THE WAR'S OVER, BUT THE CHRONIC ABSENTEE WILL RESPECT YOU MORE AND YOU MAY RECLAIM HIM IF YOU GIVE HIM ANOTHER CHANCE WHEN HE KNOWS YOU DON'T HAVE TO.
3
ISN'T THAT RIGHT, JOE?
NOW, YOU HAVE GOT ME OUT ON A LIMB, PETE. I'LL ADMIT I'VE WANTED TO DO WHAT BILL IS THINKING OF, BUT STILL I'D FEEL SORT OF CHEAP FOR DOING IT. READERS, LET'S HAVE YOUR OPINIONS ON THIS PROBLEM!
4

Letters From Readers

Your Home Is Your Castle!

"Ownership of Mill Village"
(Pete & Bill, Oct., 1944)

Dear Pete & Bill:

It's nice to have a home of your own, to sit by your own fireside. If you only have a table and a chair, they're all your own and you're welcome there. You are as good as anybody in the land and as happy as a king upon his throne. What more do you want, when you have your wife and children and a nice little home of your own. The government should see that everyone owns his own home. By all means the mill should sell its houses to its help. (PB 100).

Home-Owning Might Bring Dissension

"Ownership of Mill Village"
(Pete & Bill, Oct., 1944)

Dear Pete & Bill:

While it is possible that employees would be more content, still I could not reasonably support the idea of employees owning their own homes in the Mill Village. Ownership of homes in the village by the employees might not prove satisfactory in every instance—in fact it might bring about dissension between the bosses and the home owner. (PB 101).

Employees Should Have Plots for Gardens

"Ownership of Mill Village"
(Pete & Bill, Oct., 1944)

Dear Pete & Bill:

Employees would be more contented and happy—feel more at home, so to speak, if they owned their own homes. It might be better if they owned homes in the country, reason-

MEMORIES OF OLD MAN CARELESSNESS—*By Marth B. Pittenger*

No. 24—Something New

Joe's mill was running full speed on New Year's Eve, because of the war. There was no time on his shift to devote to the usual New Year's celebrating.

So Joe decided to do something new, just to express his emotions for the forthcoming year. He had been a drawing tender for several months and was growing weary of doing the same thing the same way all the time.

I stood around, peering over his shoulder. Shortly, a chocked roller presented itself. "Now, is your chance," I murmured. He looked questioningly at the roller as if to say, "Why stop the frame?" I gave him a knowing reply. "No need, Joe."

And so Joe's nimble fingers darted between the rollers, attempting to disperse the cotton. In the twinkle of an eye the rollers caught Joe's fingers just as I knew they would.

The foreman sent Joe out just as the New Year bells were announcing the birth of a new year. Joe lamented his bad luck, as he called it. I had another name for it.

If you don't know what it is, just remember what they call me.

ably near the mill village, but, since the mill operators own the village houses, they might be willing to sell at a reasonable price together with plots for gardens where edibles for a small family could be cultivated. The restless, roving worker, who is constantly on the run from one mill to another, would not be interested in owning a home. (PB 102).

Overseer Should Have Last Word in Employing

"Determining Employee Aptitudes" (Pete & Bill, Nov., 1944)

Dear Pete & Bill:

Workers should be chosen by the man in charge rather than by the personnel department of a plant. The overseer is in constant touch with all the people in his room or department, and he knows each individual's character. Every person has a different temperament which is not known to the personnel department. No doubt good advice could be given by that department which would be valuable in choosing men for positions, but it does not take the place of experience of an overseer.

I would like to add an observation that any person put in charge of help, must be human and fair both to the employer and the employee; firm, without any harsh treatment; above all never showing any favoritism to anyone, nor any selfish or political ambition. He must think only of the good of the organization and everyone involved. (PB 103)

Books of Interest

Tube Data for Plant Engineer

SEAMLESS STEEL TUBE DATA; Seamless Steel Tube Institute, Gulf Bldg., Pittsburg 19, Pa.; 320 pages; $2.50.

This loose-leaf binder book on tubing is divided into four principal sections with guide index covering general data, mechanical tubing, pressure tubing, and reference tables, which will be useful for all engineers in textile mills which must install, repair, and specify tubing.

The section on mechanical tubing covers information on typical uses, suggestions of how to obtain best results through the use of tubing, determining proper size, with complete tolerance tables, properties for beams, and a digest of standard specifications. The section on pressure tubing covers various pressure formulas, specifications, and tolerance tables for boiler tubes, heat exchanger and condenser tubing, still tubes, alloy steel pipe, stainless steel analyses, with metallurgical data. The reference table section is unusually extensive with many formulas, weight tables for rounds, squares, rectangles, surface areas both inside and outside, and other tables commonly found useful in tubing applications.

Quality Control Tables

SAMPLING INSPECTION TABLES, by Harold F. Dodge and Harry G. Romig; John Wiley & Sons, Inc., 440 4th Ave., New York; 106 pages; $1.50.

While the sampling inspection tables presented were developed by the Bell Telephone System for use in its manufacturing operations, the principles, tables, and charts given may be adapted by the textile industry for use in controlling the quality of goods made under government contracts. Single and double sampling are covered. Factors to be considered in setting up inspection plans, the "average outgoing quality limit" concept, the mathematical background for sampling inspection tables, and work procedures for applying these tables are discussed.

Other Publications

STANDARDS OF TEXTILE MATERIALS (1944 Edition); American Society for Testing Materials, 260 South Broad St., Philadelphia 2, Pa.; 490 pages; $2.75.

THE EMPLOYMENT OF THE HANDICAPPED VETERAN; Policyholders' Service Bureau, Metropolitan Life Insurance Co., 1 Madison Ave., New York 10; 56 pages.

SYLVANIA NEWS
TEXTILE EDITION

JANUARY *Published in the Interests of Better Sight and Sound* 1945

High-Speed Rotation is Studied with the Sylvania Strobotron

Emitting flashes of light at a frequency that can be accurately controlled, Sylvania Strobotrons have found extensive industrial applications in the study of high-speed motion. They appear to stop turbines, motors, and other rotating equipment so that their motion can be studied under operating conditions.

Smoke patterns around fan blades are studied with the Strobotron. Studies like this give valuable data on blade design (General Radio Company photograph.)

DID YOU KNOW...

That electrical contractors now offer, on a contract basis, a complete maintenance service on fluorescent installations? This convenient Sylvania-sponsored plan is helpful both to small industrial plants, and to larger plants with heavily burdened maintenance staffs.

* * *

That many Sylvania Radio Tubes are used in the complex system of electronic equipment that helps make possible successful bombing attacks on Tokyo by the giant Superfortresses?

Mill Operations Facilitated by Sylvania Fluorescent Lighting

High Intensity, Reduction of Shadows Contribute to Production Efficiency

In many leading textile mills, Sylvania Fluorescent Lighting is proving a boon to production. By reducing annoying shadows to a minimum, this high-caliber, efficient illumination greatly facilitates performance of critical visual tasks and promotes a higher degree of accuracy. Freedom from glare relieves eyestrain, and the relative coolness of Sylvania Fluorescent adds greatly to worker's comfort.

An outstanding example of the high standard of illumination to be attained with Sylvania Fluorescent is the installation at the Waumbec Mills in Manchester, New Hampshire. The weave shed, as well as nearly all other sections of the mill, was relighted to a maintained average of 32 foot candles. Nearly a thousand units are used throughout the mill. The result is increased efficiency of all operations—weaving, warping, slashing, twisting, drawing in, spinning, etc.

Both management and personnel are highly pleased with the new and improved lighting system.

In the weave shed at Waumbec Mills, Sylvania Fluorescent Fixtures are mounted directly over the center of each loom to provide the maximum in efficient, glarefree illumination.

7 FIXTURES FIT MOST PLANT JOBS

Both design and installation of general industrial fluorescent lighting are simplified by the use of Sylvania Fixtures. Made in 7 models, based on two fundamental designs, these fixtures are adaptable to either individual or continuous-row mounting. Moreover, available accessories permit the use of any one of 7 different mounting methods. With this choice of units and mounting methods, every general lighting requirement can be met.

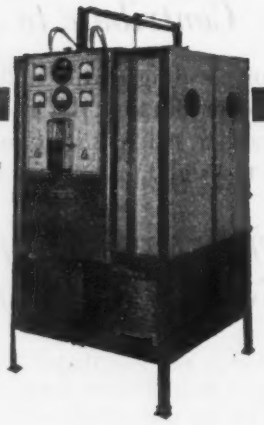
"Oh, it isn't all ME, *General. Don't forget there's Sylvania Fluorescent throughout the plant."*

SYLVANIA ELECTRIC

SYLVANIA ELECTRIC PRODUCTS INC., Salem, Massachusetts

MAKERS OF FLUORESCENT LAMPS, FIXTURES, ACCESSORIES; INCANDESCENT LAMPS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

ACCELERATED TESTING for WEATHERING and FADING OF MATERIALS



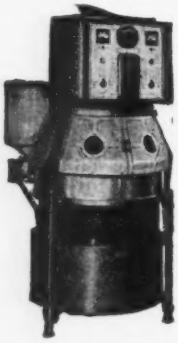
ATLAS TWIN-ARC WEATHER-OMETER

. . . twice the speed of single arc machine

Faithfully duplicates the combined weathering effects of sunlight, rain, heavy dew and thermal shock; accelerated to reduce years of actual weathering to a few days of testing.

The new Twin-Arc Weather-Ometer is equipped to take large size specimens in order to meet the new Federal Specifications demanding accelerated weathering tests. Full automatic control of light and water periods is provided by the Atlas cycle timer unit which can be set to meet standard and special requirements of weathering tests. A direct reading thermal regulator, automatic shut-off switch and a running time meter are included as standard equipment. After setting exposure cycles on the control panel, the Weather-Ometer can be safely left in continuous operation overnight without attention except to replace carbons once in 24 hours.

The Atlas Weather-Ometer proves the durability of materials under exact conditions of weathering found in actual use in outdoor exposure.



ATLAS FADE-OMETER

The recognized standard testing machine for determining the fastness to light of any material or finishes. Specimens are rotated around the Atlas Enclosed Violet Arc — the closest approach to natural sunlight — in masked holders. Automatic temperature control to within ±3° F. and humidity regulated by a constant reservoir according to requirements of tests. Operation is completely automatic without attention from operator; can be left in continuous operation overnight.

★ *Originators and sole manufacturers of accelerated testing devices for a quarter of a century. The Atlas Fade-Ometer, Weather-Ometer, Launder-Ometer are the accepted standard accelerated testing machines all over the world.*

ATLAS ELECTRIC DEVICES CO.

361 West Superior Street, Chicago 10, Illinois

Round Table

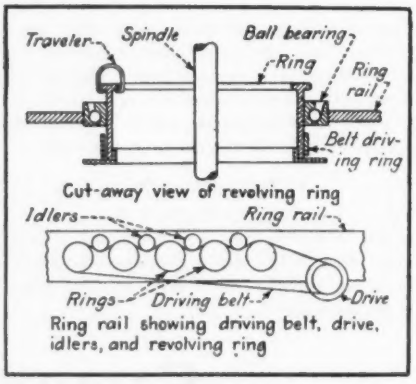
FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

What Do You Think of This Revolving Spinning Ring?

It has been recognized that the speed of the traveler over the surface of the ring is the limiting factor in the speed possible with ring spinning.

Such apparent limitation can be overcome, I believe, by a device such as this which is, essentially, a revolving spinning ring. What do you think of it?



Ring rail showing driving belt, drive, idlers, and revolving ring

As can be seen, a belt is used to revolve the ring in the same direction as the spindle is turning. The speed of the ring might be such that the traveler would remain approximately

Cross section of heavy-duty tire showing rayon cords between layers of rubber. Rayon tire cord fabric in background.

Once regarded as a delicate fiber, associated chiefly with feminine apparel, rayon has invaded "rugged" markets such as tire cord for war planes, heavy duty trucks, military fabrics and self-sealing gasoline tanks. Military tires today might well be called "rayon tires," for the rayon fabric is as important as the synthetic rubber used in their construction.

Second only to cotton, in poundage consumed — that is rayon's phenomenal achievement!

Versatility is the factor which catapulted rayon into such an independent position as a textile fiber. Tailor-made, its properties can be controlled to assume the characteristics of many fibers and to meet, within limits, the requirements of their end uses. Entering the war in a wide variety of uses strictly *on its own* — it also had to *take over* for silk — *pinch-hit* for nylon — and ease tight situations in cotton, wool, and linen.

Small wonder that rayon today is serving in a myriad of uses not dreamed of even a few years ago. And progress continues. Science and research are ever seeking for new uses — to provide even more diversified civilian and industrial applications after the war.

Technically, all rayon is produced from cellulose. More than three-fourths of all cellulose consumed by the rayon industry consists of highly refined wood pulp. As the leading domestic producer of this highly specialized product, Rayonier is proud of its contribution to the rayon industry, and will vigorously continue its program of developing new and improved types of wood cellulose.

RAYONIER
INCORPORATED

Sales and Executive Offices: 122 East 42nd Street, New York 17, N.Y.
Mills: Hoquiam, Port Angeles and Shelton, Wash., and Fernandina, Fla.

Specify Air Express

MILLIONS of dollars are lost annually by the ordinary slow-downs of business and industry due to the constantly recurring need for tools and materials and *waiting for delivery!*

AIR EXPRESS can close many of those gaps between planning and performance, save many of those dollars!

As you put new production plans into operation, you will find AIR EXPRESS at your service with expanded facilities for helping you cut the high cost of idle machines, idle labor, idle goods.

A Money-Saving, High-Speed Tool for Every Business

With additional planes now available for all important types of traffic, 3-mile-a-minute Air Express directly serves hundreds of U.S. cities and scores of foreign countries. Thousands of shippers are saving substantial sums through Air Express, employing its economy and efficiency in an ever-increasing number of ways.

WRITE TODAY for "Quizzical Quiz"—a booklet packed with facts that will help you solve many a shipping problem. Dept. PR-13, Railway Express Agency, 230 Park Avenue, New York 17, N. Y., or ask for it at any local office.

AIR EXPRESS

Gets there FIRST

Phone RAILWAY EXPRESS AGENCY, AIR EXPRESS DIVISION
Representing the AIRLINES of the United States

stationary on the ring. Or, perhaps, the speed of the ring might be used to increase the maximum spindle speed to any extent up to the present limiting speed of the traveler over the surface of the ring. This latter situation means perhaps a maximum of doubling present spindle speeds with a proportionate increase in yarn output per spindle hour.

I recognize that revolving the ring will affect most of the principles of ring spinning as we now know them. I believe it will nullify the 27° angle theory and will permit the use of bobbins of extremely small diameter. Also, we should no longer be as limited as we now are as to maximum ring size. The revolving ring may alter appreciably ballooning and its effect on spinning.

Since such rings are not now in use (patent is pending on them), it is hard to visualize just how they will work and how they will affect spinning theory as we now understand it.

I should like to hear from TEXTILE WORLD readers as to whether or not they think these rings will work, how they will affect spinning theory, and why. *(R-104)* William J. Shore, Consulting Engineer.

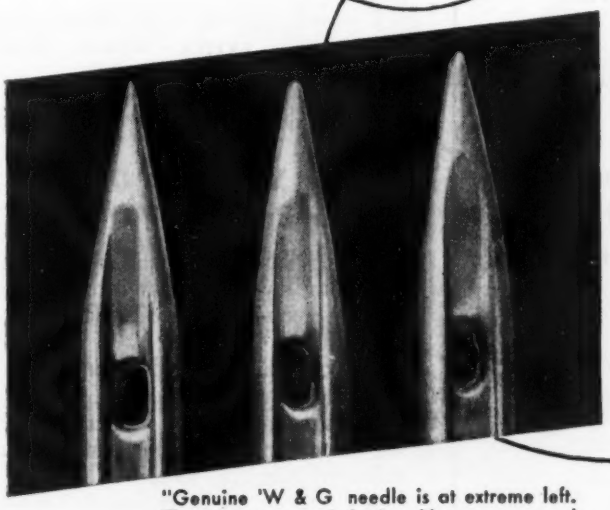
(As with all Round Table subjects, TEXTILE WORLD will pay its regular space rates for all answers to this inquiry that are suitable and accepted for publication. Address replies to Editor, Round Table—*Ed.*)

Can a Small Mill Employ Specialized Maintenance?

For some time now I have been reading and hearing about specialized maintenance in the cotton mill. This program is seemingly the very thing for the big mills that have plenty of shop facilities and mechanics but I am not so sure it will work in the small mill. The idea of putting all fixing and maintenance under a special supervisor and relieving the production men of the upkeep of machinery is sound. However, in the smaller mill each maintenance man under this supervisor must perform a number of jobs; and it seems that this would defeat the purpose of specialization which depends upon each individual maintenance man being a specialist. In other words, the maintenance man given a number of jobs would hardly be more expert and efficient than when he worked under the production department.

Some small mills may have a modification of this specialized-mainte-

EYES RIGHT



"Genuine 'W & G needle is at extreme left. The other two are imitation. Note pronounced irregularities in eye of spurious needles."

The operation of high speed industrial sewing machines requires that the thread pass through the needle eye at terrific speed. Consequently, the eye of the needle must be perfect in height, width and angle.

The slightest imperfection in the eye will cause the thread to fray and eventually break. Should this occur frequently much valuable time is lost by the operator. Avoid these costly delays by using only genuine needles.

Willcox & Gibbs needles are genuine needles. Every "W & G" needle is rigidly inspected—feature by feature. Should the microscopic tests to which each is subjected, reveal the slightest defect, although invisible to the naked eye, that is sufficient cause for its rejection.

Genuine needles contribute immeasurably to efficient machine operation and, consequently, increased production.

WILLCOX & GIBBS SEWING MACHINE CO.
214 West 39th Street, New York 18, N. Y.

IT'S TIME TO REMEMBER WE HAVE SOME SIGNS TO REPLACE

FROM the dark despair of Dunkirk until a few weeks ago, no signboards told you the direction nor the distance to any British village. Nor did any railroad station disclose its identity — to friend or foe.

Now, with invasion a fear forgotten, again you may know rather than guess your way to Little Tooting, and see when you arrive at Finbury Cross.

For the signs are up in England again, that he who walks in freedom may see.

Not yet, with half a war yet to be won, can we replace those familiar signs which have marked the path of free American enterprise.

Necessary war-time restrictions, emphasizing maximum output with minimum regard to the costs and conveniences of peace-time production, still rule.

But we're ready to put up the old signs of business progress — *Open Competition, Quality Fabrics, Manufactured in Modern Mills, Square Dealing, Dependable Service,* among others — the moment we can.

By these signs will you find your way to the textile mills which we represent as selling agents.

MINOT HOOPER & COMPANY

Selling Agents, 40 Worth Street, New York City

(established 1841)

BOSTON • CHICAGO • SAN FRANCISCO • ATLANTA

nance system; and, if so, I would be glad to hear about their experiences. I am particularly interested in the organization of the department and the total number and types of jobs assigned to each maintenance man. *(R-99)*

Rayon Terminology Is Called Confusing

I am convinced we need a new name for all synthetic fibers. "Rayon" is not all inclusive. "Man-made fibers" and "synthetic fibers" are not good.

As is known, the Federal Trade Commission rules that all fibers with a cellulosic base are rayon; whereas, other man-made fibers are synthetic. In England, all man-made fibers are called rayon.

There is a confusion of terminology. I do not see why acetate fibers should be classed with regenerated cellulose fibers in a group separating them from nylon and other non-cellulosic synthetics. One yarn company fought the Federal Trade Commission on this very point, but was overruled on the basis that "rayon" was a generic term for all synthetics. This seemed like sound reasoning until the non-cellulosic synthetics came on the market, and I am ready to agree that the present ruling of the Federal Trade Commission is not soundly based and is illogical.

I would like to know what other readers of TEXTILE WORLD think about the term "rayon." *(R-98)*

Soldier Wants to Develop Screen-Printing Patent

I am writing for assistance in determining how I can put into production a screen-process cylindrical printing machine which I have invented and upon which I hold patent rights.

The patent was granted Aug. 11, 1942, the day of my induction into the armed service. The papers were delivered Aug. 22, 1942.

A model of my invention was made in Los Angeles, Calif., where I reside. A test, prior to my departure, was made and proved conclusively that the device has extensive possibilities in the textile field, as well as in many others.

I am familiar with the old method of flat hand screen-printing and also with the metal-cylinder method. This new cylindrical printer will effect considerable saving in time, and conse-

DRAX-treated fabrics lead a charmed life!

Trademark Reg. U. S. Pat. Off.

Johnson's DRAX, born of wartime needs, is a practical finish which *protects* the newness, freshness, crispness of fabrics. DRAX *guards* the fabric freshness of any textile or garment . . . cotton, rayon, linen, wool . . . dresses, playclothes, sportswear, shirts. DRAX-treated fabrics resist dirt . . . withstand handling . . . won't easily soil . . . shed water.

Not only do DRAXed garments have extra sparkle and freshness to begin with, but they will continue to lead a charmed life because DRAX protection is so easy to maintain. The housewife will be able to re-DRAX clothes and fabrics right in her own home. Or she may obtain DRAX service at her laundry or dry cleaner.

DRAX is being strongly merchandised! Part of every Johnson national advertisement is devoted to DRAX promotion—in The Saturday Evening Post, Ladies' Home Journal, Good Housekeeping, The New Yorker, American Weekly, and many other publications. Consumers will be looking for the DRAX tag or label, when buying!

Advertisements in Daily News Record and Women's Wear Daily tell buyers, garment makers and converters about DRAX.

DRAX is easy and economical to use! You need no extra, expensive equipment. DRAX is non-flammable, odorless, cannot harm skin or fabric. DRAX stays stable in solution, will not separate or harden during storage, may be diluted with ordinary tap water.

FREE! Generous sample of DRAX. Secure *your* free sample of DRAX with full instructions and complete information. Treat a piece of material, either at the mill or in your own home, and see for yourself what DRAX does. Fill out the coupon and mail it today.

S. C. JOHNSON & SON, Inc.
Product Finishes Department, Racine, Wisconsin
Starrett Lehigh Bldg., 601 West 26th Street, New York 1
Tel. CHickering 4-0077, 4-0078

DRAX is made by the makers of
JOHNSON'S WAX

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Yes, I'd like to try DRAX. Please send my FREE sample, plus instructions and complete information.

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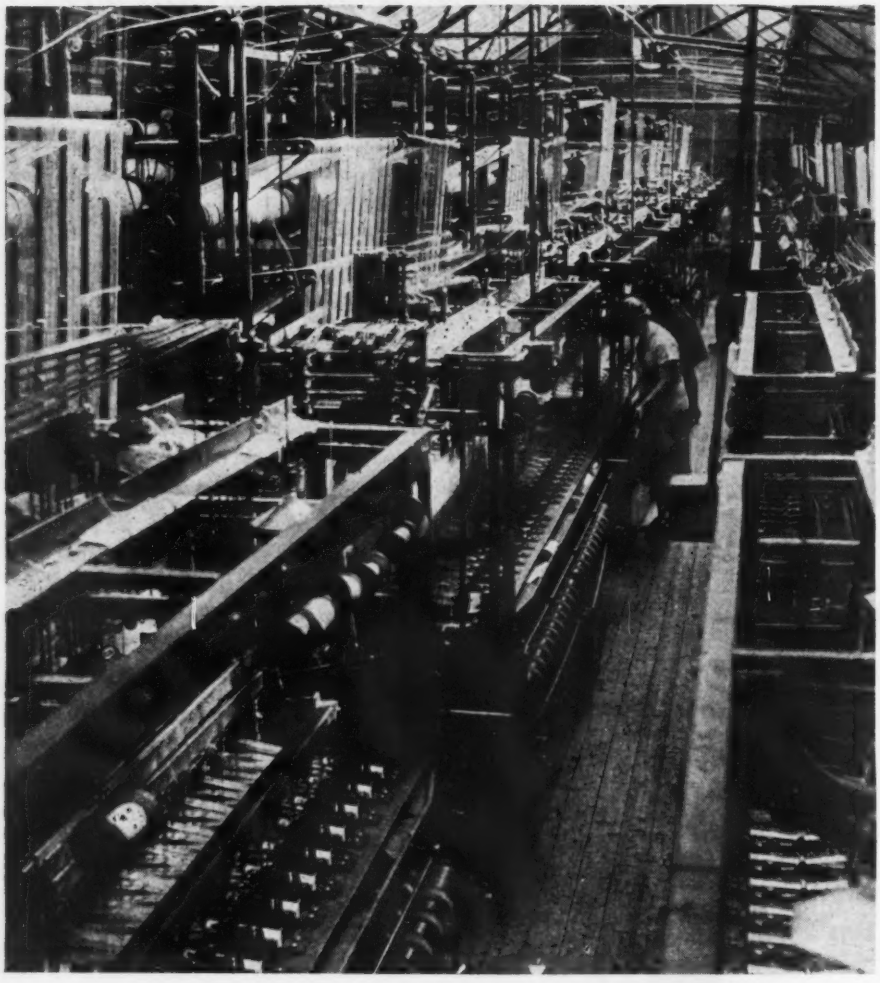
Advance Styles Courtesy of Chicago Fashion Industries

CLUTSOM HIGH SPEED SHUTTLELESS LOOMS



A Battery of Clutsom High Speed Shuttleless Looms

"A WORD TO MANUFACTURERS OF NARROW WEBBING"

This is a sellers market but tough competition will sooner or later come again.

In good times you want all the production you can get, in bad times you must have production at its lowest cost.

More webbing per operator than any other type of narrow fabric looms is the answer in either case. CLUTSOM HIGH SPEED SHUTTLELESS LOOMS are proved low cost producers in varied installations all over the world. Think now of post war prospects and take into account the merits of CLUTSOM HIGH SPEED SHUTTLELESS LOOMS.

We will gladly demonstrate the machine for you. Early delivery assured.

CLUTSOM MACHINES INC.

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quently, money. It will save metal-cylinder costs, inasmuch as the design to be printed can be applied to the metal screen itself at a minimum cost and can be removed readily and a new one applied.

Since your magazine covers such a wide field, the thought occurs that perhaps some of its readers can help me in accomplishing my aims.

I shall be more than grateful for any suggestions offered. *(R-100)*
S/Sgt. Joseph P. Biondi.

Information Requested on Salts Used Before 1930

We are interested in determining the use or uses of solutions containing a salt of a weak metallic base, which salt is capable of hydrolyzing in solution to form a substantially insoluble compound of aluminum, as contained in aluminum hydroxide.

Among these salts are the acetates, sulfates, oxalates, chlorides, nitrate, citrates, tartrates, or fluorides of nickel, cobalt, cadmium, zinc, barium, copper, aluminum, lead, or cobalt.

We wish to determine whether or not any of these metal salts in solution have ever been used *prior to 1930*, for setting dyes or colors or for otherwise improving the surfaces of materials.

The hydrolyzing action of these salts in hot solutions is to form an insoluble precipitate.

We believe that nickel acetate or cobalt acetate has been used in the above action.

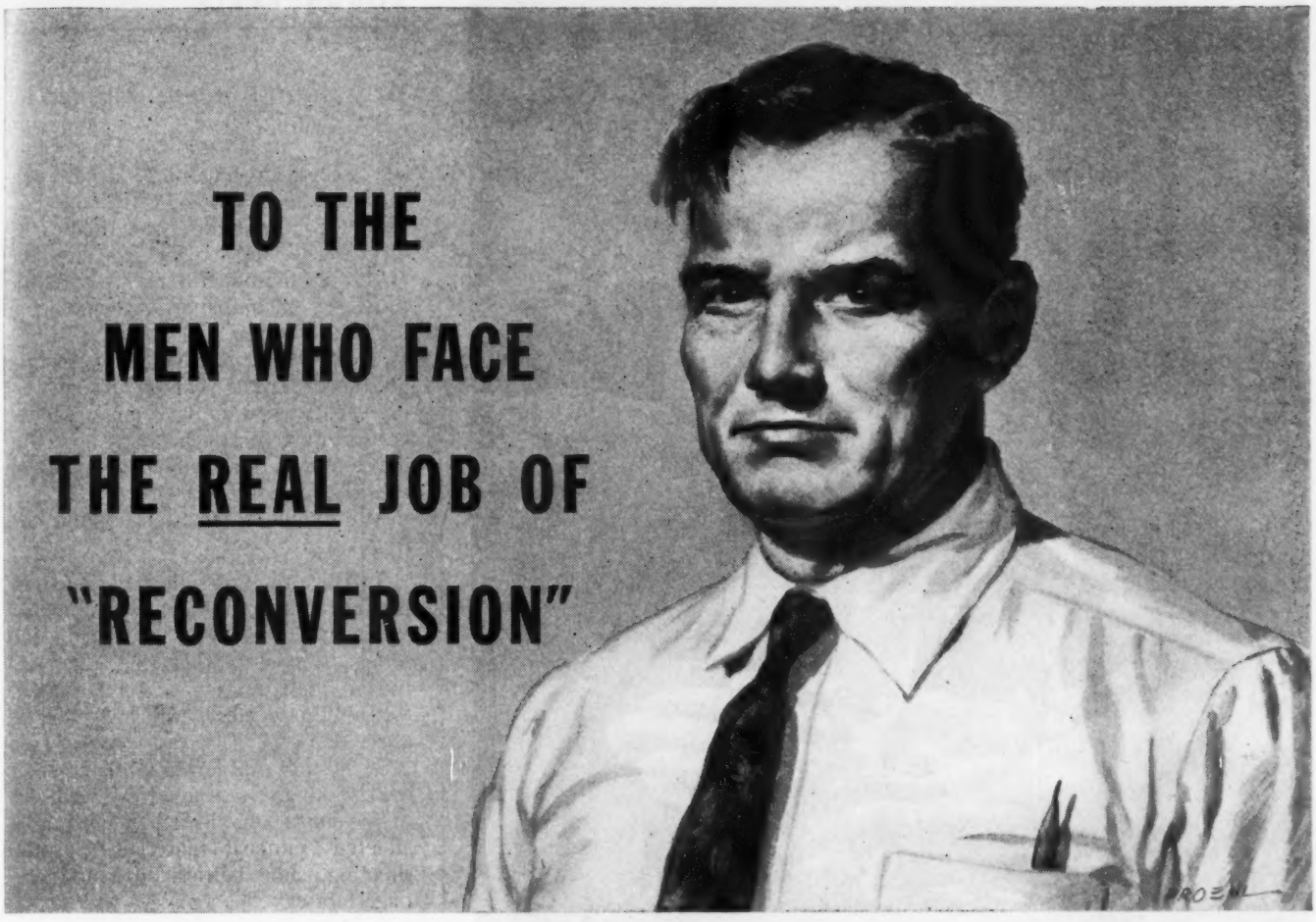
Any information concerning the use of these materials for the purposes indicated will be appreciated. *(R-101)*

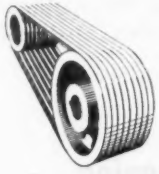
Effect of Plastics On Rubber Questioned

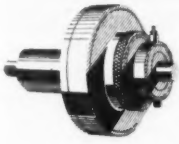
Some time ago there appeared in TEXTILE WORLD an article entitled "Plastic Coatings in the Post-War Era" which made the following statement and raised the following questions:

"Of the numerous developments in textile processing which have been stimulated by demand of our armed forces for special finishes, few, if any, offer greater promise for the post-war era than do coated fabrics of various types for appeal, household, and industrial use.

"The greatly expanded field for coated fabrics which can be foreseen







The whole world is talking about *your* job.

They call it "reconversion."

The public thinks of it as a magic transition from war materials to glorious peacetime products.

But you know, and *we* know, that reconversion will not be accomplished by waving a wand. Whole production lines must be entirely revamped. And that calls for time and skill and *sweat*.

To every plant operating man facing this problem, Dodge offers practical and valuable assistance. The Dodge Transmissioneer can make your work easier. He can save you days and weeks of time. He can show you new and better ways of putting *all* your power into the job.

Dodge Transmissioneering is based on 63 years of engineering experience. It is supported by America's most complete line of power transmission equipment. In one form or another it contributes to the mechanical flow of power in the vast majority of the nation's plants.

Dodge "know-how" and products together, insure power drive systems that are advanced in design, that put *all* the power in the job, and that ease the work of the men charged with their installation and maintenance.

There is a Dodge Transmissioneer near you. Put him to work. He can prescribe, *and provide*, the most efficient equipment for your reconversion needs.

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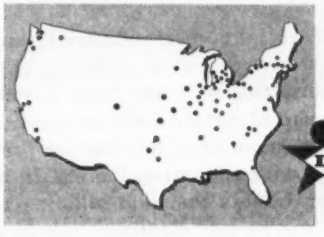

There are 210 Dodge factory graduate Transmissioneers, located in principal cities, to show you new and better ways of transmitting power.

Sign of the Dodge Transmissioneer

DODGE
MISHAWAKA

THE RIGHT DRIVE FOR THE JOB

poses several important questions. What materials will be employed for fabric coatings? What types and constructions of fabrics will lend themselves best to coating? What new methods and equipment will be employed for applying these materials? Who will apply the coating—the chemical manufacturers, the textile finishers, or companies specializing in fabric coating?"

While we realize that some of these questions may be years in the answering, we are wondering if any evidence is beginning to appear as to how this development may affect the use of rubber-coated fabrics.

We should like to ask, therefore, the following:

1. Have the war-time experiences of producers and fabricators of coated fabrics with new types of coating materials been such that they are positive in their opinion that the market for rubberized fabrics will definitely be affected?
2. If the rubberized-fabric market will be adversely affected, what classes of products are likely to be most affected—raincoat materials, hospital sheeting, shoe fabrics, auto and carriage fabrics?
3. Are there any types of coated fabrics in which it appears that rubber will be retained as the preferred coating?
4. Is there any evidence now of any marked changes in the methods of application of rubber coatings? (*R-106*)

How Should Cleaning Be Handled in a Mill?

This may not be a technical question, but I would like to have some advice. I have been depending on each overseer to keep his department clean. Do you think this is a good idea, or should I organize a cleaning crew to serve the entire mill? We have 25,000 spindles and 218 looms. (*R-105*)

Reader Suggests System For Better Use of Ideas

The farther up the ladder he climbs, the better the mill executive should see every part of the textile industry in its relation to all the other parts. Though he has made certain that the men under him also read trade magazines such as TEXTILE WORLD, he still has the responsibility of seeing ideas

BETTER HEALTH "IN THE PALM OF HIS HAND"

LAN-O-KLEEN

Hundreds of thousands of men and women in factories all over America acclaim Lan-O-Kleen* because it gets rid of dirt and grime so easily, effectively, and actually leaves their hands feeling better. But of even greater importance is the fact that this remarkable powdered soap is doing so much to help prevent occupational skin diseases, because it does its job of cleansing the hands so *mildly* and without injury to the skin's surface.

Lan-O-Kleen is the first industrial hand soap to provide a full measure of the double action of effective cleansing and proper superfatting with soothing, protecting lanolin. It is a powdered soap of mildly alkaline reaction compounded with granular corn-meal which has been impregnated, by an exclusive process, with anhydrous lanolin. In its use, the lanolin in Lan-O-Kleen buffers the mild alkaline reaction of the soap (necessary for proper cleaning), protecting the natural oil film of the skin and leaving the hands ready for top-speed production.

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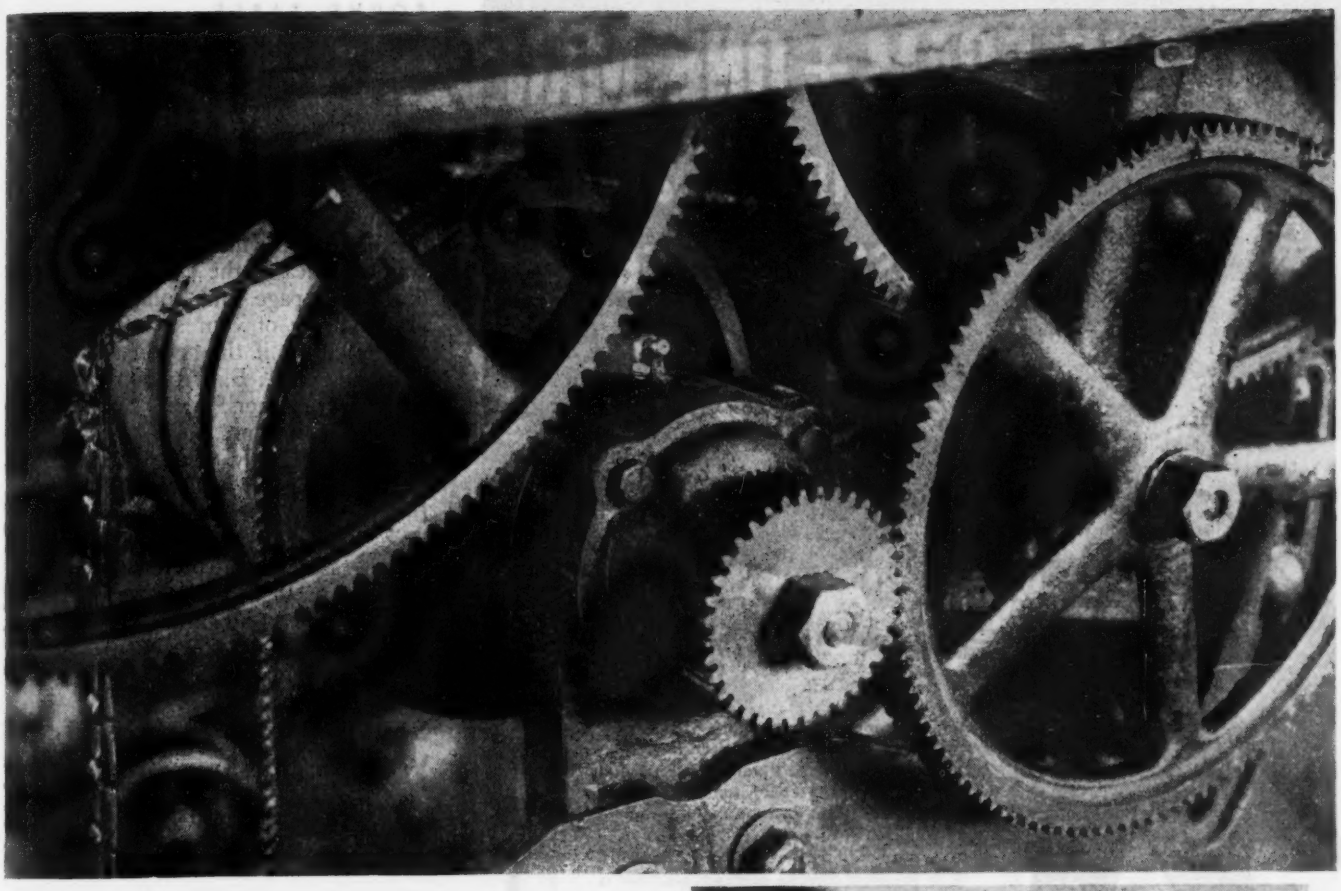
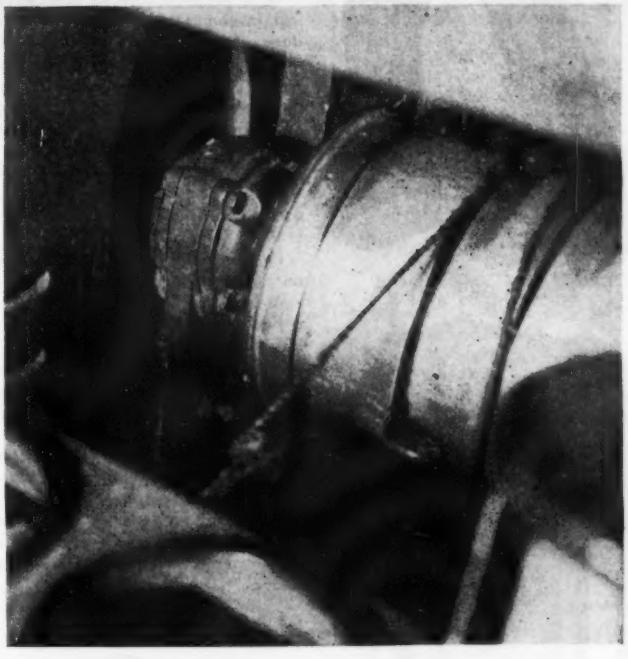


Two Views of a MODERN MONEY-SAVER



One advancement predicted for the future of the textile industry is greater use of ball bearings. This ball bearing installation—on a spinning cylinder—shows both the gear end and the pulley end. It is typical of the improvement that can be made on existing equipment, to provide quieter, smoother operation, resulting in lower power consumption and a more uniform, higher quality yarn. Ball bearing equipment of all types is not available today but many different, money-saving applications can be furnished promptly, at low cost. West Point Foundry and Machine Company specializes in mill modernization. In most cases a minimum of new machinery is required. Your present equipment can be adapted and improved so that it will operate more efficiently and more economically. We will gladly study your problems and make recommendations to you, without obligation. Write for further information.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

PYRENE FOAM + ONE MAN

Killing Oil and Gasoline Fires

is as simple as squirting a Hose

Automatic, mechanical mixing of Pyrene Foam Compound, air and water is so perfectly engineered in the Pyrene PlayPipe that fire fighting with Pyrene Foam is as simple as using a fire hose. Positive extinguishment is certain because oxygen is cut off and flames smothered by Pyrene Foam in seconds.

With the new Pyrene method, no time is lost in complicated preliminaries. *One man does it!* . . . Here's all there is to it: Turn on water from hydrant or standpipe—(salt water is just as effective). Pick up the PlayPipe; put on KnapSack or HipPack containing Pyrene Foam Compound; move to the fire; drop pick-up tube in the compound container and play foam on the fire. 400 to 1200 gallons of foam a minute are laid down solidly on the fire. It's out at once and for keeps.

Pyrene Foam and PlayPipe are as effective on outdoor as on indoor fires; and on solid embers as on volatile liquids, because after a fire in gasoline, oil or flammable liquids has been smothered in seconds with Pyrene Foam, by merely lifting the pick-up tube out of the container a water stream instantly replaces the foam, thus smoldering embers of adjacent fires are effectively handled.

Pyrene PlayPipe and Foam Compound are listed by Underwriters' Laboratories and approved by Factory Mutuals.

Pyrene offers industry a complete line of fire extinguishers, for every hazard. Demonstrations and estimates without obligation.

By the way: **When did you last test the fire extinguishers in your home?**

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Founded 1907

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AFFILIATED WITH THE C-O-TWO FIRE EQUIPMENT CO.

from the broader viewpoint; his subordinates' primary objective is to find what they can apply in their own departments.

As an experiment, draw a rough sketch of the mill with the departments blocked in. When you discover an idea in the current issue, jot down the page and column in the proper block of your sketch. Add a key letter: *A*, if the action is for you alone to decide; *B*, if it should be discussed with others; *C*, if you want to file it for future use.

Written lightly with pencil, notes may be erased when completed and the same sketch used over several times. Or you may wish to file the sketch each month, preferably stapled to the issue to which it refers, so that it is available at all times. *(R-96)*

Soaking Doubles Life of Woolen Slasher Blankets

In looking back over my TEXTILE WORLD magazines, I happened to come across and re-read C. A. Brown's comment pertaining to "slasher blankets and rolls."

It certainly was good reading and presented true facts.

I have been in and around slashing departments for 20 years and consider myself fortunate in getting my training from those Scotchmen from Glasgow which he mentioned. To this day, I look back with admiration for them, as they certainly knew their *taping*, as it was called then.

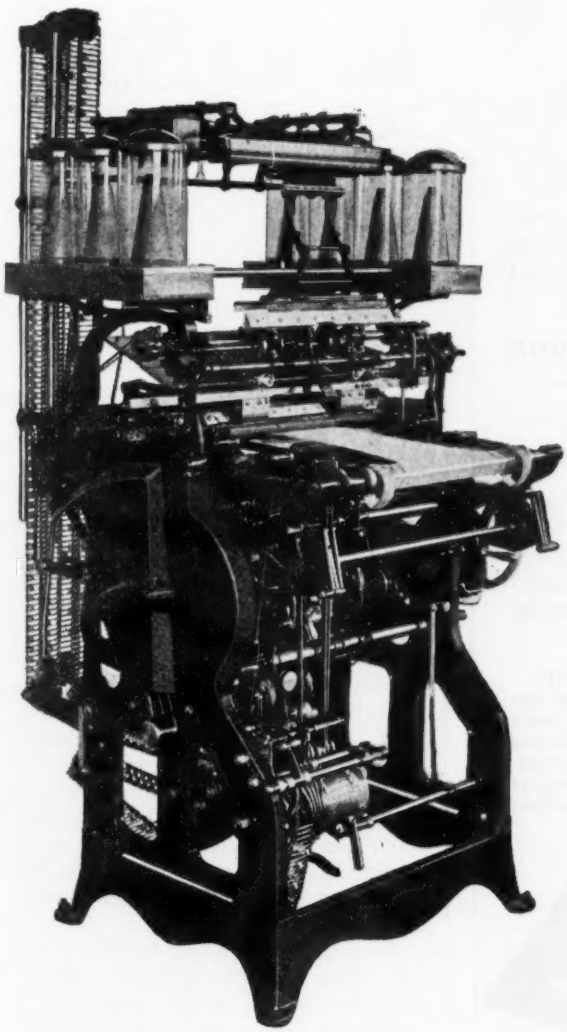
Today we have hook reeds on rayon slashers, temperature controls, and size controls; but the real old taper tender, as he was called, is missing.

As to running the hand back and forth from the big split rod to the measuring roll as many do, this test is not so accurate as to take an end out of the warp between the drag roll and loom beam. (Cut it with shears, and make sure no tension is put on it.) If this end stands up from three to four inches, there should be no worry as to size content being too little.

Brown also mentioned using a well-woven woolen slasher cloth, which I think he was absolutely right in doing. I would like to add this: Be sure to soak it in warm water and wring it out before putting it on. Take it off once a week, preferably over the week-end, and soak it again in warm water before putting it on again. This will add at least twice the life or running time to it. I might add that this information came from a Scotchman from Glasgow. *(R-97)*

YOU NEED NO CRYSTAL GAZER . . .

to tell you that when the victory whistles start to blow, there will begin the strongest current of competitive selling that has ever flowed through the channels of the hosiery industry. That's when you'll need all the mechanical advantages invention can offer—such as the many outstanding features of this



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Single-Head, Single-Unit, Full-Fashioned

HOSIERY MACHINE

Today, wherever being used in hosiery mills throughout the land, it is doing a wonderful job of modern production. You see, it knits the entire stocking from top to toe in

ONE CONTINUOUS OPERATION

saving the time and manpower lost in the operation of leggers and footers; eliminating the "headaches" of bad matching and expensive "seconds."

Sorry: but our war work limits our production for civilian purposes to supplying repair parts. However, get complete details of this machine and be ready to act when the whistles blow.

WILDMAN MFG. CO.

NORRISTOWN, PA.

AMERICAN INDUSTRIES SALVAGE PROGRAM

FOR AMERICA—THROW YOUR SCRAP INTO THE FIGHT

THIS MAN
FINDS BURIED TREASURE
in Textile Mill Floors

ASK HIM TO STUDY YOUR FLOORS
No Charge or Obligation for His Service

This is a TENNANT technical man, specially trained in his work. Invariably he finds "treasure" buried in the dark and fuzzy floors of mills where outmoded *scrubbing* is used for floor maintenance.

SOME "TREASURES" OUR CUSTOMERS FOUND

1. $600 saved each year in scrubbing costs for one room alone.
2. 90% of floor replacement costs eliminated.
3. Saved ½ the costs of wages spent for sweeping.
4. 20% saving in bills for electric lighting.

● The effect of clean, shining *Tennant DRY cleaned floors* in a mill room cannot be overestimated! They reflect "good housekeeping," raise employee morale, stimulate pride in the job and promote better workmanship.

WRITE TODAY FOR DETAILS
We'll tell you how you can get that "buried treasure" out of your floors by using the Tennant Dry Cleaning System. This involves cleaning, hardening and steel wool burnishing of floor surfaces with this Tennant Floor Machine.

Where Mill Floors Gleam, Mill Profits Grow!

The way to finer floors
TENNANT
Floor Maintenance System

G. H. TENNANT COMPANY
2586 North 2nd Street
Minneapolis 11, Minnesota

Questions AND Answers

Wool Overcoating Inadequately Scoured

Technical Editor:

Included are two samples of a heavy woolen overcoating of 20% goat hair, 15% South American wool, and 65% reworked wool. We have a lot of trouble with offensive odor and bad appearance of our product. I shall appreciate it if you will suggest to us a suitable finishing process in order to enhance the appearance and to avoid disagreeable odor. The water of our Permutit installation is completely exhausted after ½ hr. of washing out so we have to continue rinsing with hard water. Is there a soap on the market good enough to work out satisfactorily with hard water? (9024)

The trouble with the piece of goods having the offensive odor is that it is not clean. First, be sure that a better wool oil is used before starting the making of the shoddy, as this has a very offensive odor. Second, see that a good wool oil is used when making the blend of stock. If your goods are not clean, this odor will carry through to the finished product. A good, straight, red oil would be best to use on the rags in making the shoddy. If this oil is not obtainable, there are a number of good wool oils on the market. Cheap wool oil is a very expensive proposition in the long run.

If this mill has a wool scouring machine, it is advisable to scour the shoddy before dyeing in order to produce brighter colors and use less dyestuffs. There will also be less waste in the carding and the spinning and in the end a better finished piece of cloth will be produced. Some mills scour their shoddy after scouring wool, leaving the wool scouring liquid in the bowls and adding only a small amount of ammonia.

In finishing the goods, for a few sets, scour the pieces before fulling, because the colors in the finished product are stained a great deal. This is due to the fact that the stock was dyed on top of a greasy shoddy. A certain amount of color always fulls

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DYED WOOLENS

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STRENGTH
SOFTNESS
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SIMPLICITY of PROCESSING
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off, so it is best to scour the goods before fulling to get a very clear and distinct pattern, which will then make a clear appearance on the finished product. The goods should be fulled with a good 8-oz. soap and scoured thoroughly afterwards. If the piece becomes too warm in the fulling it will start the colors running and create a blurry appearance. The writer does not know of a hard-water soap for textiles. It is best to use some type of water softener such as Calgon. If your Permutit installation is not large enough, it would be advisable to have the capacity increased to suit your needs as soft water is most vital in the finishing of woolens.

Grinding Nappers

Technical Editor:

An issue has arisen in our finishing room, which has caused much discussion.

We are running cotton-back knitted pile fabrics of wool face, using South American coarse wools on the face. The dispute is whether or not the nappers should be ground every four weeks or whether they are to be ground when the finisher decides that the napper wire is dull enough to be ground.

We would appreciate hearing fom you as to what is the proper procedure for grinding napper clothing for this type of production. (9022)

Inquiries have led us to believe that the only suitable period that can be decided upon is that which is found to be necessary by the finisher when the napper wire becomes dull. Of course, if you make very steady runs of one type of material, you can soon establish what period is necessary. This, however, is very seldom the case, and of course the period will vary considerably depending upon the amount of napping and the character of the wool.

Accident-Prone Employee

Technical Editor:

You excellent article has been read with interest. I refer to "The Accident-Prone Employee" appearing in the TEXTILE WORLD, May 1943.

It will be greatly appreciated if you will refer us to a more complete description of the apparatus used in giving the "esthetokinetic tests" and the method of scoring the results.

Are these tests, or similar tests, being used in the United States? If so, would it be possible to see them in operation? (9020)

A full discussion of esthetokinetic tests can be found in "The Personal Factor in Accidents," published by

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TOP PERFORMANCE
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THE RESULT OF LONG ACCUMULATED EXPERIENCE, PLUS QUALITY STANDARDS RIGIDLY MAINTAINED
Fig. 2129
HE'S INTERESTED IN TEN THOUSANDTHS OF AN INCH
If parts do not measure up to the stringent requirement for accuracy they never enter a Lunkenheimer Valve.
Fig. 2125

For over three quarters of a century, Lunkenheimer has specialized in the manufacture of valves . . . the most efficient and dependable valves which scientific design, engineering knowledge, and fine mechanical skill can produce.

"Quality" is a living ideal at Lunkenheimer—guiding every operation from design to final assembly. Maintenance men well know that quality. Through long experience they've come to rely on Lunkenheimer Valves for the best in performance at lowest maintenance cost.

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the Medical Research Council of the Industrial Health Board of the British Government, in 1942, and especially in "The Prognostic Value of Some Psychological Tests" by E. Farmer and E. G. Chambers, pages 6 to 9. This was published in 1936 by the same agency, and gives the same in fuller theory with description of apparatus.

The Massachusettes Institute of Technology may be able to give you assistance, as they are following out the experiments initiated in Britain as far back as 1926. The Institute conducted similar tests in accident repeaters in a limited number of workers.

The relation of muscular reactions to accident proneness and general efficiency in the operation of modern high-speed machinery is having a further interesting sequel. Industrial training programs, which will undoubtedly be most prevalent in the postwar era are incorporating physical exercises to develop those particular parts of the body most necessary to the operations of a particular industry. These exercises are not Swedish drill but ones especially and scientifically developed for the particular industry. Physical exercises take up about 25% of the training period and should have a permanent effect on the length of a worker's industrial life, as well as reducing accidents at the early stages.

Finishing Velveteen

Technical Editor:

I am enclosing a small sample of velveteen, about which I would like the following information:

1. Will this piece cut and finish satisfactorily?

2. What would be the best formula for treating the back side before cutting?

3. At what stage in the finishing should the goods be sheared?

4. Can a flame singer be used, or is a plate type the best?

5. Can you give me a brief list of the proper sequence of finishing operations; for instance, treating, cutting, scouring, brushing, drying and finishing, etc.

It might be the case that you will be able to inform us where we can find a text or some work that would furnish us with other information in regard to the finishing of this fabric. (9013)

As you know, velveteens in this country are produced by comparatively few manufacturers, and there is little general knowledge as to the methods and techniques of production. Some of the more recent textbooks on weaving and designing contain a moderate amount of information on velveteen fabrics, and I would suggest that you

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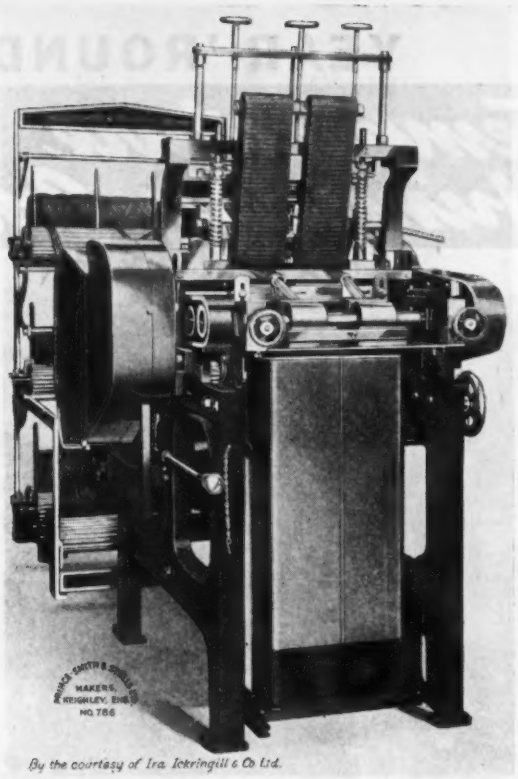

By the courtesy of Ira. Ickringill & Co. Ltd.

DOUBLE HEAD CAN INTERSECTING GILL BOX

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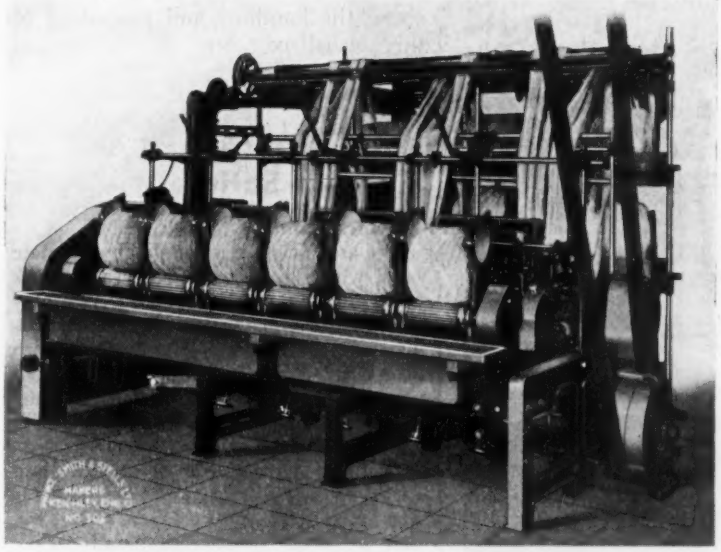

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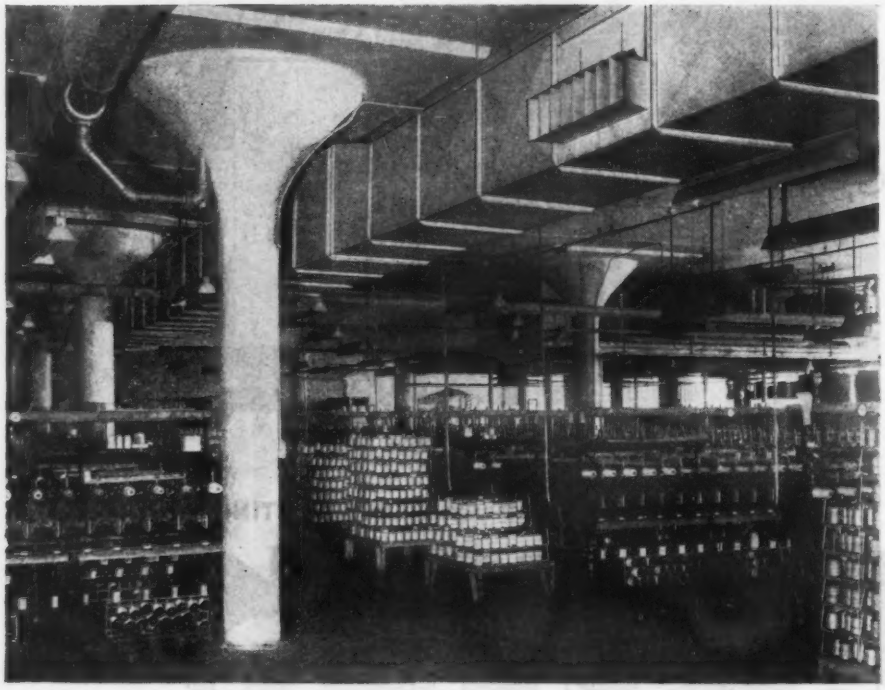
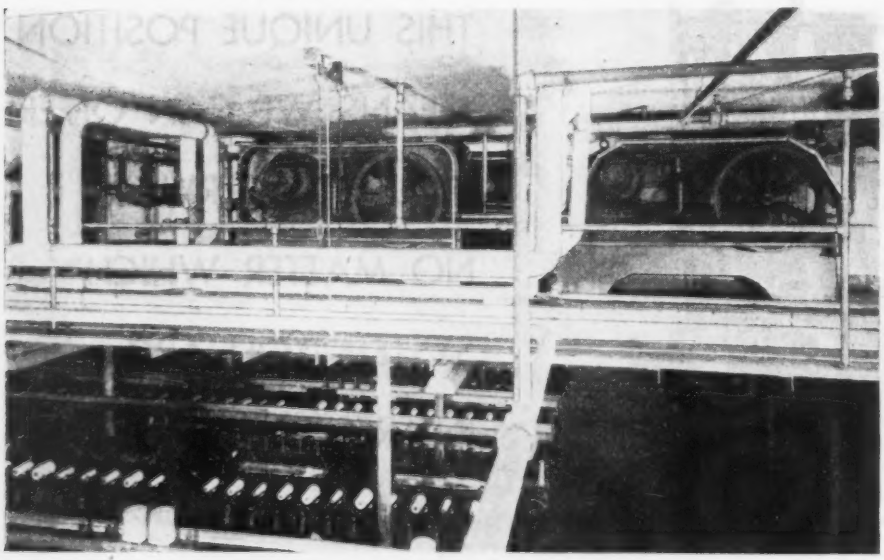
Temperature and Humidity Control

(RAYON - NYLON)



Bahnson engineers cracked a hard nut in this case by solving the problems of a basement room, concrete construction, with 12' ceiling height streets on three sides and no place to build a fan room.



Careful engineering and the flexibility of Bahnson equipment permitted a practical mezzanine installation (4' headroom) to produce 45 tons of refrigeration in a central station of 35M CFM capacity.

Bahnson System

AIR CONDITIONING ENGINEERS

THE BAHNSON CO. WINSTON-SALEM, N. C.

886 Drewry St. Atlanta, Ga. | 93 Worth St. New York City | 703 Embree Crescent Westfield, N. J. | 976 W. 6th St. Los Angeles, Cal. | W. J. Westaway Co., Ltd. Hamilton, Ontario

consult these. The sample attached to your letter is a twill-back velveteen of comparatively coarse weave.

In answer to your specific questions, we would say that this piece could be cut and finished satisfactorily, though we would venture no opinion as to its appearance on finishing.

In regard to treating the back of the cloth before cutting, we understand a thin starch-size is used for this purpose, and we also believe a chemical treatment is sometimes given, but we have no details as to its nature.

Velveteen can be sheared at any stage after the pile has been formed. The point at which this operation is performed would depend, to some extent, upon your sequence.

In regard to singeing—from the information we were able to obtain, we understand that a plate-type singer is preferred, though either a plate or flame singer can be used.

As to the proper sequence of finishing operations, these would probably be as follows: back-sizing before cutting, cutting, scouring, brushing, dyeing and finishing. Additional brushing can be given after dyeing if desired and shearing can take place any time after the first brushing operation.

While the above information is none too detailed, as we said previously, not too much is known generally about the handling and processing of this specialized fabric.

Warp Streaks In Rayon Satin

Technical Editor:

We are enclosing a sample of an acetate satin which has a peculiar warp streak down through the center. We have only recently run into this trouble and are finding it in the acetate satins made in both of our plants. The satin in one of our plants is made from 70-den. acetate, whereas in the other plant it is made with 55-den. acetate.

In the first place, these particular warp streaks are not extensive. We cannot say what percentage of pieces have them, but they do occur far too frequently. We find they appear only in the acetate satins. These were first seen in a 70-den. acetate satin and only recently have appeared in a 55-den. acetate satin.. The 70-den. acetate is a Canadian yarn being warped from bobbins on the old silk system. The 55-den. acetate being woven is warped from 55-den. American acetate and at high-speed from cones.

As far as we have been able to trace these particular warp streaks, the trouble seems to occur in the warping department during a rest period or a lunch hour, when the warping mill is standing idle. We believe that the yarn standing from

IT TAKES A GOOD START TO MAKE A GOOD FINISH

Back of every saleable fabric there's a good start. And many a successful textile manufacturer has found Olate processing a big help in assuring both a good start and a good finish for his goods.

Olate is a fast starter as well as an effective finisher. This low titer soap makes fluid solutions which penetrate rapidly, and are absorbed evenly by the fibers. A fast rinser, too. It needs no coaxing to leave the fabric when its work is done.

Equally important, fabrics are off to a *safe* start—and a *safe* finish—with Olate. Olate treats all fibers and fabrics with supreme gentleness. Even in the heavier fabrics, it helps protect against odor difficulties, fiber discoloration, harshness or stickiness.

In times like these, you've got to have maximum yardage all the time from your available manpower. You've got to have processing agents that can do their part in delivering the goods fast and safely. In times like these, you'll find Olate unusually helpful.

Procter & Gamble

Olate

—SAFE AND EFFICIENT FOR EVERY TEXTILE SOAP USAGE

OUT OUR WAY

MY OWN FAULT? LISSEN, YOU NUMB-SKULL, IF YOU'D PUT SPEEDI-DRI ON THAT OIL-SOAKED FLOOR I WOULDN'T SLIP NO MATTER HOW FAST I WORKED!
YOU'D GET HURT IN A PADDED CELL! I SUPPOSE TH' GEARS RAN YOU ALL OVER TH' SHOP TO GRAB YOUR FOOT!
THEM TWO HAVE BEEN ARGUIN' EVER SINCE THEY WAS APPRENTICE BOYS TOGETHER-- I DON'T THINK THE FLOWERS WILL DO MUCH GOOD, DO YOU?
WHILE OLD BILL ARGUES, PRODUC-TION WILL FALL OFF ENOUGH TO PAY FOR TEN TONS OF SPEEDI-DRI!
J. R. WILLIAMS
SYMPATHY
T. M. REG. U. S. PAT. OFF.
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SPEEDI-DRI is the modern, economical, efficient answer to oil-soaked, slippery floors. White, granular, and oil-thirsty, it is spread by hand and swept up with a stiff brush without shutting down a single machine. Its use eliminates expensive mechanical cleaning equipment, caustics, and dangerous solvents, and greatly reduces the man-hours needed for clean-ups. At the same time, it does a better job.

As soon as it's applied, it provides a non-skid surface. Workmen can move at top speed without fear of slipping. It absorbs oil and grease like a blotter takes ink, even pulling up old deposits in time. SPEEDI-DRI is non-combustible and fire retardant. Leading insurance companies recommend its use. There are 101 money-saving applications of SPEEDI-DRI. Write your name and address on the margin of this advertisement for complete facts — and FREE SAMPLE!

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Midwest & South — Waverly Petroleum Products Co., Philadelphia 6, Pa.
West Coast — Waverly Petroleum Products Co., Russ Bldg., San Francisco 4, Calif.

SPEEDI-DRI
OIL AND GREASE ABSORBENT

QUESTIONS AND ANSWERS

the condenser reed on the warper back to the bobbins, or cones, as the case may be, has been affected by the atmosphere or by tension. In the sample submitted we were definitely able to trace down that particular streak to the warping mill where it was left in over night. In other words, the warper operator did not finish her section, but stopped her warping mill at the center of the section and let it stand. Both warping superintendents in the two plants advise that they have seen a difference in the degree of brightness of a new section starting up after a warper has stood idle. From this evidence, it appears to the writer, as mentioned earlier, that there has been a change in the acetate yarn due to the atmosphere or to tension while the warping mill is standing idle. (9016)

Your findings concerning the warp streak confirms our first reaction when we saw the piece of fabric sent. It was a band streak caused in horizontal, or Swiss warping.

You seem to be of the opinion that the streak was caused by atmospheric conditions or tension. We believe that it is the latter since we assume that you permit your yarn to be conditioned in the same room in which it is run.

As to the streaks which you are getting from your high-speed warper, and which are generally prevalent, we cannot tell you anything which you do not already know. Experience has found such streaks to be caused from one or more of the following conditions:

1. Undue tension on the yarn, either on first end or too much tension on all ends so that the elastic limit of the yarn is exceeded, resulting in unequal distortion or elongation.

2. Mixing yarn of relatively old production with yarn of more recent production. Most yarn manufacturers assign a code to their yarn so that this can be avoided.

3. Substitutions in finishes principally due to wartime scarcity. A producing plant may adopt a finish and think it is entirely satisfactory only to find that upon ageing or upon mixing the old with the new production, it is not.

4. The use of sizing materials which do not boil out readily or insufficient boiling out of the fabrics before dyeing. Frankly, we doubt if either of these is your trouble.

5. Uneven tension on section during warping, poorly built beams, such as beams with ridges or one end of greater diameter than the other, or too much stretch during slashing.

Of course, there are other causes of defects in yarn or mixed yarn, but such causes are usually quite obvious and not difficult to trace.

These Hooker Chemicals are Helping Textile and Dye Chemists

Listed below are some of the Hooker chemicals that are making life a little easier for textile and dye chemists. We have indicated their principal uses in your fields, but many of them have other uses in the textile field as well. All are being produced in commercial quantities and shortages are unlikely in adopting them for your processes.

Product Chemical Formula Molecular weight	*Description*	*Uses*
Aluminum Chloride, Anhydrous $AlCl_3$; 133.3	Gray crystalline solid	Catalyst; Dye making
Antimony Trichloride, Anhydrous $SbCl_3$; 228.1	Yellowish solid	Catalyst; Dye making; Mordant in textile printing; Moisture and fire-proofing textile
Benzoate of Soda C_6H_5COONa; 144.0	White crystalline solid	Dye intermediate
Benzoic Acid C_6H_5COOH; 122.1	White crystalline material	Dye intermediate
Dichlornaphthalene $C_{10}H_6Cl_2$; 197	White crystalline solid	Chemical intermediate
Cyclohexanol (Hexahydro Phenol) $C_6H_{11}OH$; 100.1	Clear, colorless viscous liquid	Solvent
Monochlortoluene $C_6H_4Cl\text{-}CH_3$; 126.5	Clear, colorless liquid	Solvent; Dye intermediate
Orthodichlorbenzene $C_6H_4Cl_2$; 147	Clear, colorless liquid	Solvent; Dye intermediate
Phosgene (Carbonyl Chloride) $COCl_2$; 98.9	Colorless gas at ordinary temp. Colorless to light yellow liquid under pressure	Dye intermediate, Chlorinating agent
Sodium Tetrasulfide Na_2S_4; 174.23	Aqueous solution containing 40% by weight of compound. Dark red liquid.	Manufacture of dyes

In addition to the chemicals listed above, Hooker makes many more that are being increasingly used in the textile and dyeing fields. Our technical staff has been helpful in solving problems in these fields with use of Hooker chemicals and is ready to work with you in the application of Hooker chemicals to meet your requirements. A copy of the Hooker General Products List, available on request, will give you an idea of the diversity of Hooker chemicals and their uses.

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CAUSTIC SODA MURIATIC ACID BLEACHING POWDER
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HOOKER CHEMICALS

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Barnettsville Cotton—6
Clinton Cotton—5
Mohawk—7
Pacific—10
Patterson—12
Priority—11
Shefford Hosiery—8
Spindale—4
Whittier Cotton—3
American Yarn—6
Dan River—3

Full Circle Type

That Bradleys are rapidly becoming the standard wash fixtures in the textile industry, too, is evidenced by the increasing number of mills who have and are now installing these modern, sanitary group wash fixtures.

Bradley Washfountains serve up to 10 persons simultaneously with clean *running* water from a central sprayhead. One Washfountain takes the place of 8 to 10 separate "single-person" wash basins, each eliminating from 16 to 20 faucets. This alone with the reduced number of piping connections means a drastic cut in maintenance work.

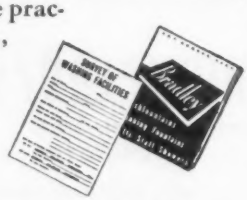
The water is drained off as used—no dirty bowls to clean out—no delays—no contamination.

Water consumption is less with Bradleys, space is saved—cleanliness and health promoted.

INSTALL BRADLEYS NOW

You may be one of the tens of thousands of plants equipped with Bradleys—but this is the time to re-survey all washrooms—rearrange or make additions. With rumors and reports of advancing prices on many products, post-war, forward looking manufacturers are modernizing *all* their washrooms by installing Bradley Washfountains now.

Write for latest Catalog 4308 and Washroom Survey Sheet . . . The Bradley Washroom Consultant in your locality is ready to make practical suggestions. BRADLEY WASHFOUNTAIN CO., 2325 W. Michigan Street, Milwaukee 1, Wisconsin.



BRADLEY *washfountains*

Write today for Catalog 4308 and Washroom Survey Sheet.

BOOSTING EMPLOYEES' Morale

ATS Holds Conference at LaGrange

Conferences between textile mill men and national leaders in the Apprentice Training Service of the WMC were held recently in Danville, Va., Charlotte, N. C., and LaGrange, Ga. The purpose of the conferences was to investigate and identify training needs in maintenance fields. Substantial agreement has been reached that apprentice training is the most satisfactory over-all method of reaching the desired results through training.

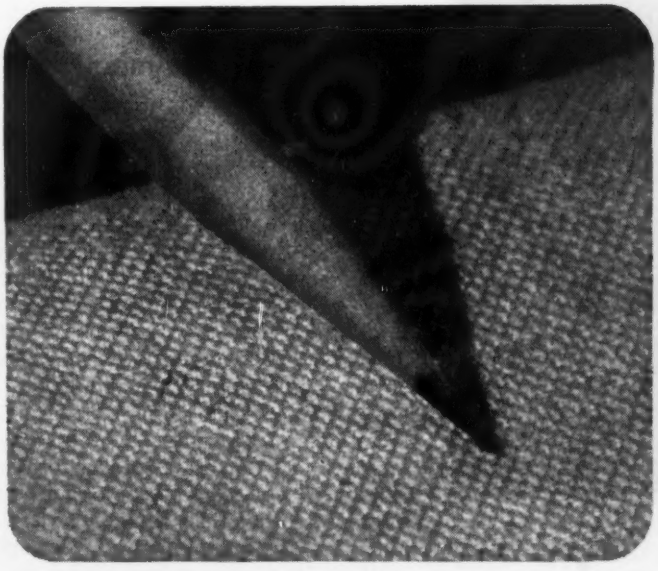
Another aim was to set up from a practical standpoint a combination of

One of a new series of "Job Safety" posters in color issued by the Division of Labor Standards, Dept. of Labor. "See Over Your Load" appears on one side of a 10x30 sheet, "Yank Them Out" on the other; while "Beware of Sharp Edges" and "Keep Oil Off Floors" are shown on another sheet. They have been reproduced from originals published by the British Ministry of Labor. The widespread demand for posters of this nature indicates their success in promoting safety-consciousness in the minds of workers. Other current posters of the Division include "Right and Wrong Ways to Lift", "Sight Security", "Learn to Lift Correctly," etc.

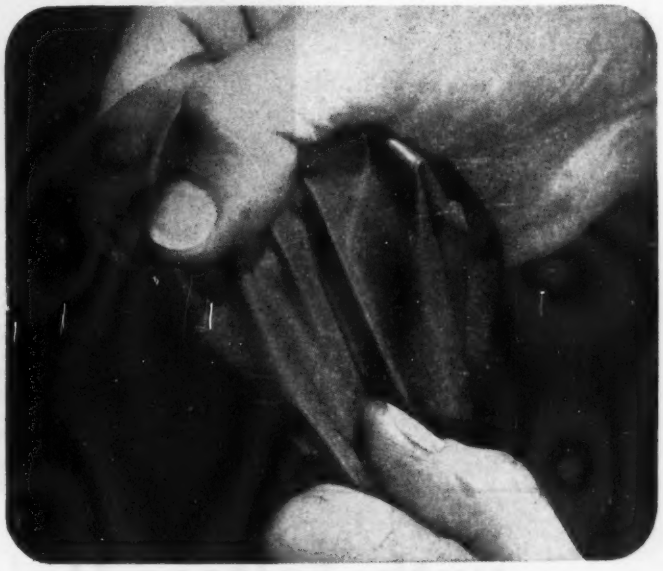
Use UBS COMPOUNDS for BACKING, COMBINING, COATING

"and do the Job Better"

● In Combining operations, UBS developed Buna Latex Compounds provide a positive one-coat bond, good flexibility, and excellent moisture resistance and ageing qualities. Outstanding in this field is UBS's Formula CT-456-B, which has been extremely successful on the can drier machine.



● When used for Backing, UBS developed Buna Latex Compounds lock the pile firmly to the fabric base, provide good flexibility and ageing, and withstand dye bath temperatures without deterioration. A variety of thoroughly tested formulas, developed for specific problems, are available.



● When used for Coating, UBS developed Compounds form a tough, flexible, contiguous film. A variety of formulas, based upon Ubatex (an original UBS synthetic), Buna, Neoprene, etc., are available. In most instances, special compounding to meet individual requirements is advisable.

Long-time specialists in the fields of Combining, Coating and Impregnating Compounds, the UBS Laboratories are constantly working with all the latest synthetics (Buna, Neoprene, Vinylite, etc.). Recent UBS developments include formulas for an original synthetic latex and a totally new synthetic rubber.

Write today, describing your Backing, Combining and Coating Problems.

Address all inquiries to the Union Bay State Chemical Company, Rubber Chemicals Division, 50 Harvard Street, Cambridge 42, Massachusetts.

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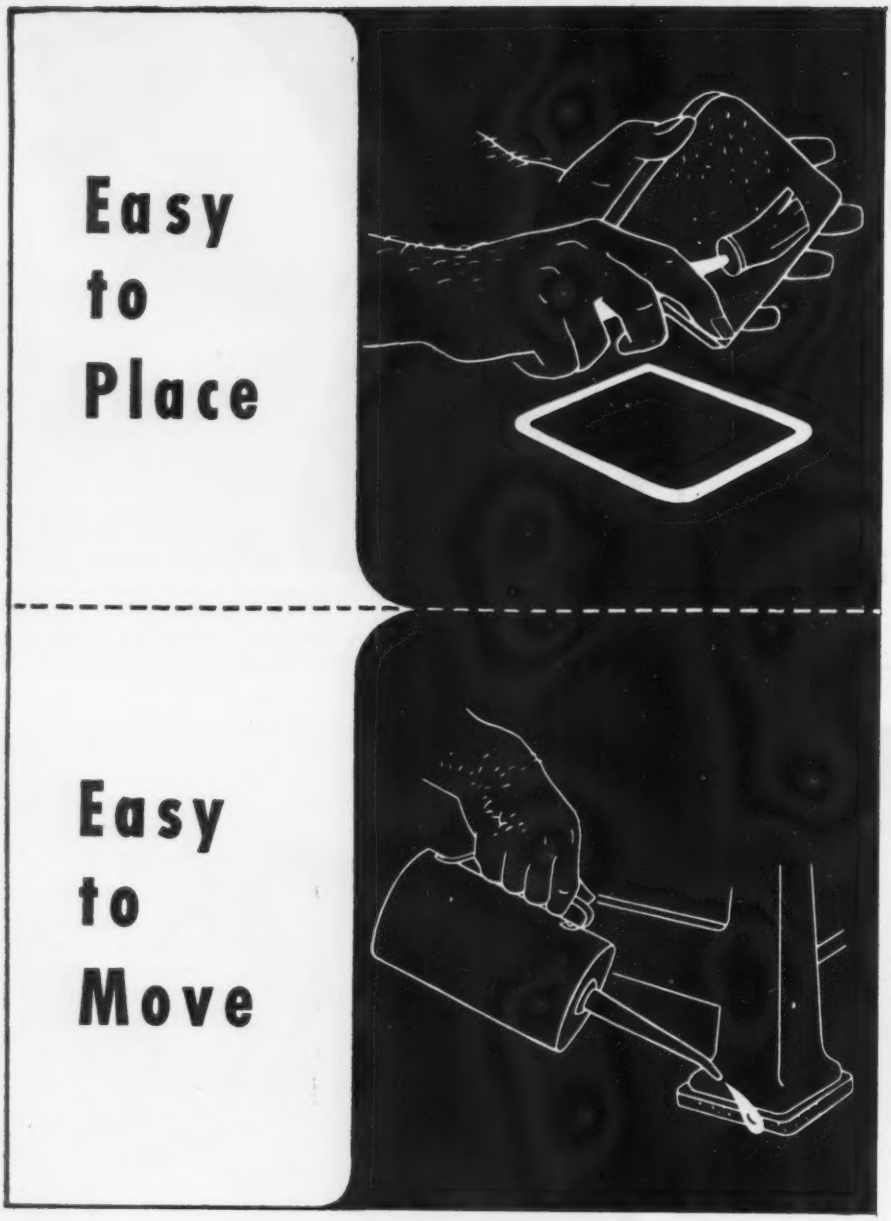
COATING COMPOUNDS · IMPREGNATING MATERIALS · COMBINING CEMENTS



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There's no boring, no drilling, no damage to floors . . . when you anchor machines with Felters Unisorb Cushion Mountings. Simply cement felt pads to floor, set machines down . . . and you're ready for *smoother* operation with a minimum of vibration and noise.

Relocation is simple, too . . . with Unisorb, you just slosh solvent around felt pads, jack up machines, and move on to a new spot.

For the complete story of Felters Unisorb—and how it may benefit you—write for a copy of "Unisorb in the Industrial Plant."

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present maintenance jobs which collectively will require a higher skill than the individual jobs in order to attract a higher type of worker and to offer that worker a more promising future. It is aimed also to stimulate new ideas and new thoughts from which improvements at present unforeseen may follow. Vocational schools are cooperating.

Honors Its Service Men

A large scroll carrying the names of four employes killed in action and 123 others serving in the armed forces has been dedicated by the Virginia Woolen Co., Winchester, Va. with members of the immediate families concerned as special guests. All other employes also attended. Exercises were in charge of the Rev. Dr. Ronald S. Wilson.

Guides Reemployment of Servicemen

"In handling these returning veterans, it is important that managers realize the many changes in personalities and attitudes of these men—they have been through trying times," says a part of the Devoe & Raynolds Co.'s Sales Manual. "They will want to think things out for themselves and they will express their own opinions on the change in practices about them. Do not force them into our routine. Help them to fit into it. Not only must we plan for the return of former employees (in many instances to assignments other than those they left) but if we can build constructively out of their experience gained under fire, we shall build the safest and most aggressive type of organization."

Carpet Craft Club Meets

One hundred and ten foremen, overseers, and staff of the Thompsonville, Conn., plant of Bigelow-Sanford Carpet Co. attended the opening night recently of the eleventh year of the Carpet Craft Club at the company cafeteria on Main Street. A roast chicken supper was served by Chief Electrician "Chef" Gene Martin, ably assisted by the new officers of the club: Howard Stetson, president, Austin Reilly, vice-president, Peter Shields, secretary and George Patterson, treasurer. The guest speaker, Supt. Elliott I. Petersen, in outlining the planned postwar program stressed the goal of at least 40% increase over prewar records with employment and

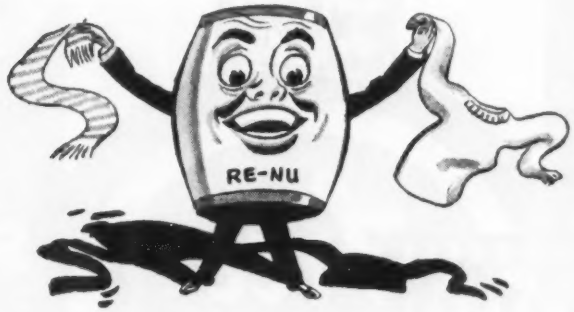
ARMOUR SUGGESTS

Ways to pick soap for a specific wet-finishing need!

1. **Fulling of Worsteds and Woolens.** Because of the increasing use of shoddy wools, it is best to choose a low-titered soap. Armour's *Certified* is recommended because of its quick penetration and rinsability. *Certified* is a vegetable fatty acid base soap of medium low titer, available in flakes or solid form.

2. **Cotton and Rayon Cloth Scouring.** When scouring follows the bleaching and rinse, it is usually done at about 180°-190° F. And this calls for a good high titer soap such as Armour's *Flint*. Available in either chip or powder form, *Flint* is guaranteed to give top performance at high temperatures. For *Flint's* titer of 41°-42° C. is proved... before you buy... in Armour's pilot plant.

3. **Raw Wool Scouring.** An economical, low-titer soap is best for raw wool scouring because the temperature of the multiple scouring bowls is usually kept around 115° F. Armour's *Re-Nu* is an excellent soap for this process because it rinses quickly and thoroughly in warm water. *Re-Nu* is a thrifty potash soap in jelly form.



There's an Armour Soap for Every Wet-Finishing Need!

You can select from many Armour textile soaps . . . each built to satisfy completely a particular wet-finishing need. And you can depend upon top performance from *any* Armour soap . . . for they're all made from carefully-selected raw materials and are rigidly controlled during manufacture.

If your order is delayed . . . we know you'll understand that it is not always possible to produce *all* the soap that's needed *all* the time . . . under wartime conditions.

Armour and Company

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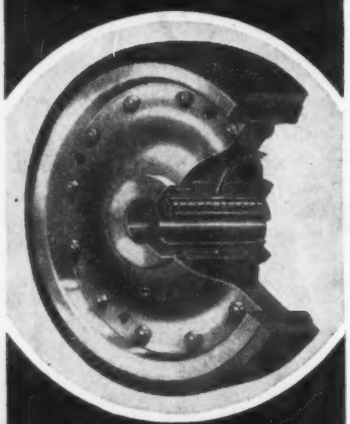

DARNELL MANUAL *Free* FOR THE ASKING

A SAVING AT EVERY TURN

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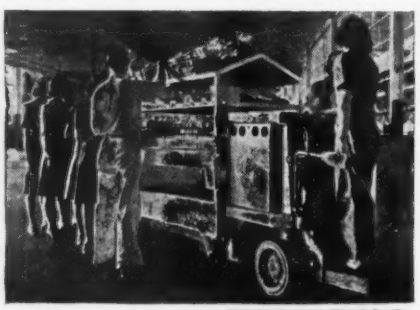
training of several hundred new employees, and purchase of additional equipment and machinery. He said particular consideration must be given the returned soldier, who must be made to feel that we have "*Kept the Faith*" by fitting him into the job, plus seniority, plus rates, "he would have had had he not gone to war."

Improving Workers' Food Habits

Operators of plant cafeterias should recognize the "lunch special" as the best means of serving nutritious food to the war worker; certainly the surest method of getting to the worker the one-third daily food requirement recommended by the National Research Council, says the War Food Administration. The advantages to both food operator and worker are greatest when a majority of the plant's workers choose the lunch special. Plants which have had greatest success with the lunch special have backed it with clever merchandising. Statistics show that when the program was launched in one war plant, only 23% of the trays were a good selection, 50% were fair and 27% were poor. Recent statitistics reflect positive results: 52% of the trays are good, 36% fair, and 12% are poor.

Bigelow-Sanford Gets Security Award

In recognition of its efforts to safeguard war production, employes, and property, the Thompsonville, Conn., mill of the Bigelow-Sanford Carpet Co. has received the new National Security Award. The award, made by the Office of Civilian Defense, was presented to company officials by Governor Raymond E. Baldwin of Connecticut at a ceremony in the State Capitol in Hartford. Elliott I. Petersen, superintendent of the Thompsonville mill, headed the delegation representing Bigelow at the ceremony.



Hoell-Parker Electric Co.

THE "GRUB CART" has graduated in this war plant to a power truck which brings refreshment to employees

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More than 100 other Organic and Inorganic Compounds

vital to victory today—READY TO WORK FOR A GREATER TOMORROW

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ACCIDENTAL DEATH	WEEKLY DISABILITY	$25.00 per Week for Confining Sickness	$10.00 per Week for Non-Confining Sickness
$5,000-$10,000	$25.00-$50.00		
Estimated Annual Cost $15		Estimated Annual Cost $20	

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News of the month

Army Pressure for Goods. Controls to concentrate effort on most needed military textiles, such as duck, came from government offices last month. Soldiers who were skilled duck weavers were being released to return (in uniform) to the industry to overcome the manpower shortage. Army officers were appointed to Selective Service areas to prevent premature induction of certain skilled workman more needed in industry than in the Army.

Ceilings were raised 4½% on duck, and duck yarns were frozen as of Jan. 15 to give duck production first call.

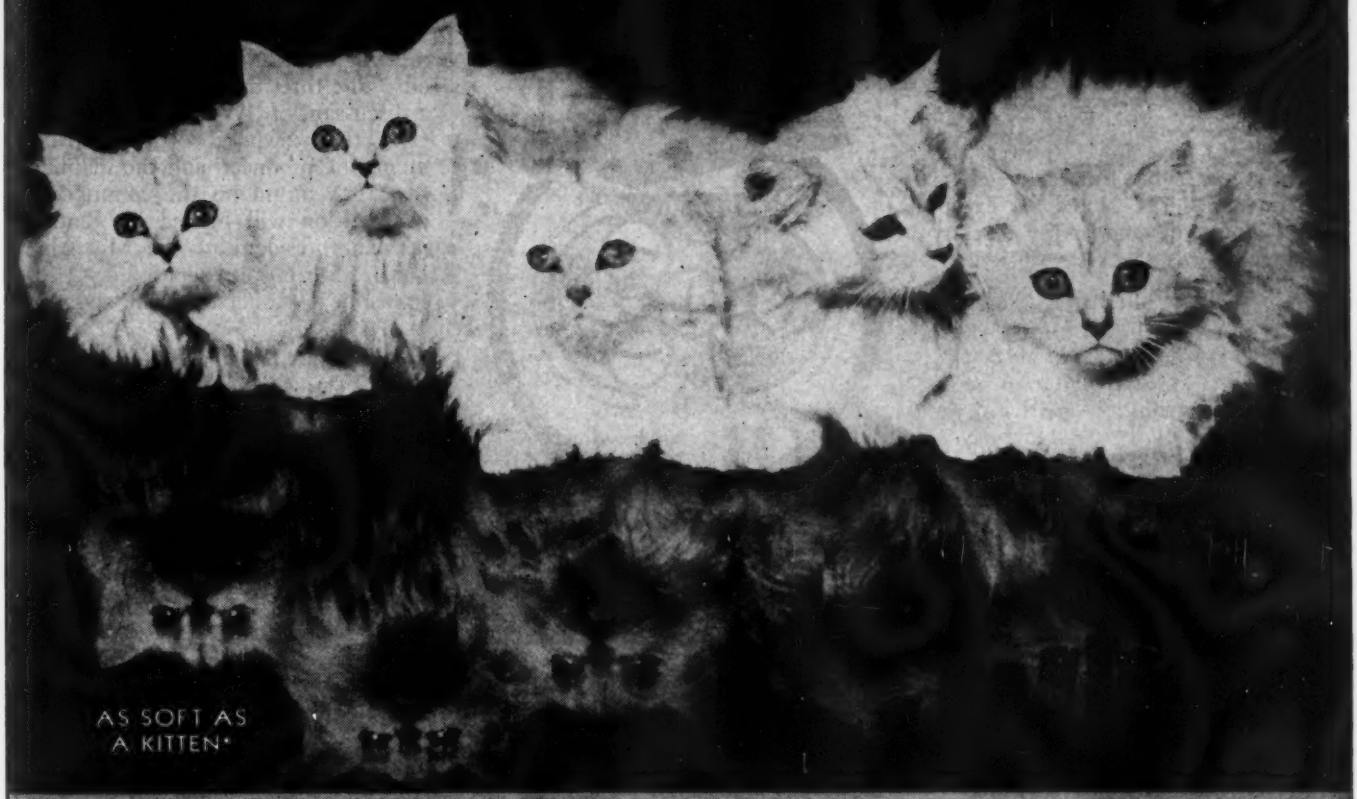
Need for woolens and worsteds jumped to new highs, freeze principle applied to tops and some yarns.

Minimum pay was about to be raised in some branches of the cotton industry. Certain wool mills in New England had been ordered to pay 54½¢ and 53¢ minimum.

Urges Wool Promotional Program. The Boston Wool Trade Association went on record at its annual meeting several weeks ago as supporting the following program for handling the wool situation: "All domestic wools shall be used currently. No wool held in the United States for foreign governments shall be sold in the U. S. For the preservation and welfare of the American wool industry, a comprehensive long-time promotional and educational program be conducted and supported by all branches of the industry, including producers, dealers, processors, and manufacturers."

New Durene Members. The Durene Association of America has elected Sellers Mfg. Co., Saxapahaw, N. C., and Southern Mercerizing Co., Tryon, N. C. to membership. Other members are: Aberfoyle Mfg. Co., American Yarn & Processing Co., Dixie Mercerizing Co., Hampton Co., Clarence L. Myers & Co., Spinners Processing Co., and Standard-Coosa-Thatcher Co. J. Burton Frierson, Jr., is president. He reported that use of Durene identification on merchandise, has increased 84%, an especially notable figure in

ONYX



ONYXSAN**

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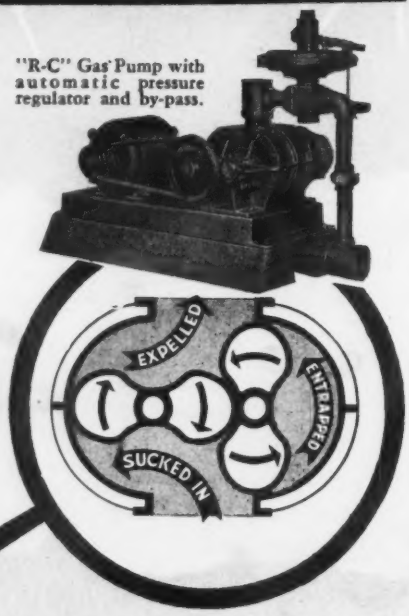
Roots-Connersville Rotary Positive Units are extensively used for boosting gas pressures on singeing machines, for blowing heated air through yarn drying machines, for blowing filter beds, for water treatment, and other textile mill needs.

"R-C" Units have lowest power consumption per cubic foot delivered at moderate pressures. Noted for exceptionally long life and ability to carry emergency loads in excess of ratings.

Twin impellers alternately suck in, momentarily entrap, and then expel definitely known amounts of air or gas, resulting in delivery of four equal volumes each revolution of drive shaft.



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"NATIONAL" means *faster* drying . . . and consistently *uniform* drying . . . on rayon, cotton, silk and mixed piece goods. No matter what type of drying machinery or equipment you require, investigation will prove, also, that "NATIONAL" means the *last* word in design, construction, performance and maintenance economy. Learn the facts, *now*, about any of the following:

Automatic Piece Goods Dryers • Straight Run and Return Type Tenter Drying Systems • Yarn Dryers and Conditioners • Truck Type Skein Dryers • Apron Type Stock Dryers and Carbonizing Equipment • Print Goods Dryers • Truck, Tray and Conveyor Type Test Dryers for Textiles, Chemicals, Food Products, etc.

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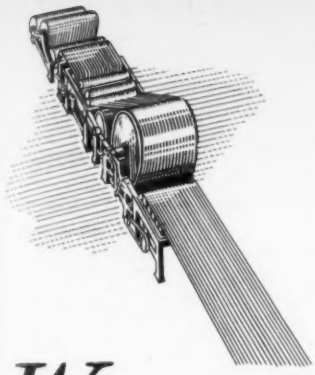
view of limited quantities of Durene yarn available for civilian goods.

Cotton Council to Meet. Representatives of all branches of the cotton industry and from 17 cotton-producing States will gather in Memphis, Tenn., Jan. 22 to 24 for the sixth annual meeting of the National Cotton Council. The three-day session will feature a discussion of "What Cotton Faces" from the viewpoint of the Government, the producer, and the manufacturer. A forum on the commodity's competition will be led by Ransom Aldrich, president of the Mississippi Farm Bureau Federation. Oscar Johnston is president of the council.

Costume Institute Formed by Metropolitan Museum. The Metropolitan Museum of Art, New York, has taken a step in a plan to emphasize the position of fashion as an art and to aid the creative efforts of American fashion designers and industries by the establishment of a new branch, to be known as the Costume Institute of The Metropolitan Museum of Art. To this

A DEMONSTRATION of how cotton fabric bags can help to relieve present acute fabric shortages was given last month at the annual meeting of the Textile Bag Manufacturers Association in New York. The association is conducting a national campaign to promote wider use for clothing and home furnishings of bags used for farm and household products. More than 800,000,000 yds. of cotton fabrics can be so converted. Virginia Jewel, fashion director of the Cotton-Textile Institute and National Cotton Council, presented a collection of garments for mother, junior miss, and little sister, made from feed bags dyed to the season's colors and styled for a variety of uses. For instance, above are shown mother-and-daughter jumpers of fabric from feed bags, dyed Infantry Blue and decorated with red felt apples.



Weavers of India . . .

● No one knows how long ago the first cotton cloth was made . . . but even in ancient days the weavers of India had found a way to improve the quality of their cloth. They learned to make exceptional cotton fabrics because they learned the importance of keeping the fibres moist during the spinning process.

Today—textile mills throughout the nation have the advantage of *Staley Starches* to accurately control the weavability, weight and finish of their products. All *Staley Starches* are under rigid laboratory control for strict uniformity of each and every shipment—day after day, year after year—so that balanced sizing formulas can remain constant. *Staley's* complete line of thick and thin boiling starches—for every textile mill use—have been developed by skilled chemists and are under strict chemical control from the buying of the corn to the finished product. If you are not already a *Staley* customer—now is the time to get acquainted with the consistent quality and performance of *Staley Starches*. Tell us your requirements and we can recommend the exact *Staley Starch* for your needs.

Number One in a series published as a Tribute to the Development of Weaving through the centuries.

1000 B. C.—When King Solomon built his famous temple, in Jerusalem, his envoys traveled thousands of miles to purchase hangings of fine cotton fabric . . . woven in India from Indian cotton thread.

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A. E. STALEY MANUFACTURING COMPANY

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Manufacturers may face the post-war adjustment period with greater confidence, if supported by the financial and credit services of a strong factoring organization.

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The factor assumes all risks of credit losses, and makes available immediately in cash, the net value of shipments as made.

Wider distribution and greater sales volume can be attained through factoring, without risk of credit losses, and on less invested capital.

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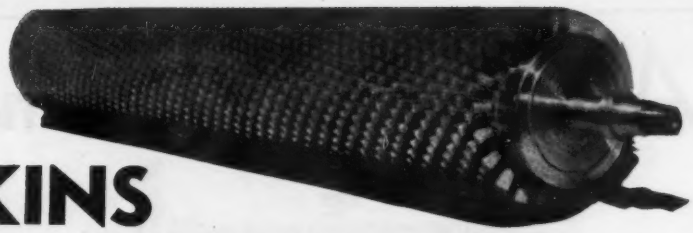
end the Museum of Costume Art, founded in 1937, has become a part of The Metropolitan Museum, and will function at its present quarters at 18 East 50th St., or other similar space, as a branch of the Metropolitan, until the postwar building program of the Metropolitan becomes realized.

1944 Rayon Production. Eleven months' shipments of filament rayon yarn approximate 488,700,000 lb. in 1944 as against 451,000,000 lb. in the corresponding period of 1943 and indicate a total 1944 production of 536,500,000 lb. Eleven months' shipments of staple fiber approximate 151,800,000 lb. as against 147,500,000 lb. the previous year. The estimated 1944 total staple fiber shipments is 165,500,000 lb. Total rayon production for 1944 (filament plus staple) is estimated at 702,000,000 lb. Figures are from *Rayon Organon*.

Cotton as Source of Pulp. Governor J. M. Broughton and the North Carolina Council of State, upon recommendation of the State Planning Board, have allocated $7,760 for equipment and assistants to complete experiments in the utilization of cotton as a source of high grade pulp for paper, plastics, film, and rayon. The experiments are being carried on under the supervision of Dr. Frank K. Cameron, of the University of North Carolina chemistry department.

AATT Meeting. The outer layer of wool fiber is the controlling factor in the dyeing of wool, according to Dr. George L. Royer, Calco Chemical Division of American Cyanamid Co. Cross-sectional photomicrographs supporting this statement were shown by Dr. Royer to the American Association of Textile Technologists during their December meeting. The microscope can be used advantageously to control the dyeing and finishing of textiles, said Dr. Royer, and Kodachrome transparencies can be made for permanent recording of findings.

German Prisoners Used in Cotton Belt. German prisoners of war began working in cotton warehouses and compresses in many sections of the belt in early December in an effort to relieve the critical shortage of labor, and reports indicate that the situation has been greatly eased. In Memphis, seven plants began using a total of several hundred prisoners. At the same time, more than 25 Arkansas compresses were certified for the use of prisoners by the War Manpower Commission, and Eighth Service Command



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METAL CORE FURNISHER BRUSHES

The Season's Best Buy BECAUSE

1. **NYLON BRISTLES** will outlast any animal or fiber bristles. Many printers have used these brushes for more than three years before having them rebristled.
2. **THE METAL CORES** can't warp or split.
3. **BRISTLES CAN BE REPLACED** on metal cores when the bristles finally wear down. We rebristle your brushes at our plant by a patented process.
4. **THE NYLON BRISTLES AND METAL CORES** do not absorb or hold color. These brushes can be washed clean, like a stainless steel dye tub. In changing colors, there is nothing to absorb old dyestuffs and to bleed into the new color.
5. **6–10% TO 25% LESS DYESTUFF** is used because Nylon Bristles (and metal cores) do not absorb color.

We also manufacture raising brushes, flock brushes, and laying brushes for cotton, woolen and worsted mills.

Since 1877

M. W. JENKINS SONS, INCORPORATED

America's Largest Manufacturer of Industrial Brushes exclusively

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MARITIME "M" MERIT AWARD

Tank Builders for over 80 Years

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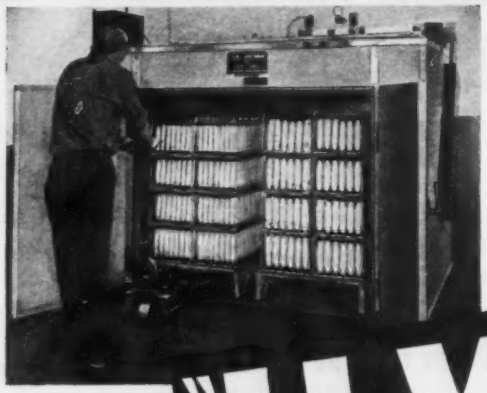
Established 1854
NEWNAN, GEORGIA

All TEXTILE FIBRES UNIFORMLY CONDITIONED



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FOR REGAIN AND TWIST-SETTING

WOOLEN — WORSTED — SILK —
RAYON — NYLON — COTTON

THE INDUSTRIAL DRYER CORPORATION
STAMFORD, CONN.

To All of Our Old Friends:

It has been our pleasure and privilege to see some of you occasionally, even in these busy days, for which many thanks.

Whether we have seen you lately or not, we are thinking about you, planning to serve you and, most of all, wishing you and yours success, and A Happy New Year.

DRAPER SOAP CO.
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171 Front St. Tel. No. Perry 1806 Pawtucket, R. I.

officers at Dallas, Texas, assigned prisoners from camps at Little Rock, Ark.; Fort Smith and Monticello.

Shortage of Rayon for Women's Hosiery. Increasing scarcity of rayon for women's hosiery is reflected in the fact that the Independent Hosiery Manufacturers Association is surveying its portion of the field to get facts on which its board of governors may act. The association has opened permanent offices in the Harrison Building, 15th and Market Sts., Philadelphia. Harry Aust is executive secretary.

New Textile Laboratory at M I T. Establishment at the Massachusetts Institute of Technology, Cambridge, Mass., of the Samuel Slater Memorial Research Laboratory as a part of the Textile Division was announced early this month. This modern laboratory houses the latest developments in electronic equipment for research on the physical properties of textiles, resulting from work sponsored by S. Slater and Sons, Inc. It will be operated under the direction of Prof. Edward R. Schwarz.

C T I Sponsors Spinner-Breeder Conference. The Division of Technical Service of the Cotton-Textile Institute in cooperation with the Delta Council, Clemson College, and the Textile School of North Carolina State College, is sponsoring a two-day conference of cotton spinners, breeders and shippers at Clemson College, S. C., on Jan. 29 and 30.

New Cottons for Women's Wear. After many years of specializing in the men's shirting field, Nofade, Inc., has made its debut in sports wear, beach wear, children's wear, mother and daughter, and junior miss fashions.

Blankets for Hospitals. A recommended commercial standard, Blankets for Hospitals (Wool and Part Wool) TS-3846, is being circulated to the textile trade by the National Bureau of Standards for acceptance as standards for producers, distributors, and users of blankets for hospitals.

TEXTILE CALENDAR

National Cotton Council, annual meeting, Hotel Peabody, Memphis, Tenn., Jan. 22 to 24, 1945.

National Association of Finishers of Textile Fabrics, annual meeting, Hotel Pennsylvania, New York, Jan. 25, 1945.

Philadelphia Textile Institute, commencement exercises, Philadelphia, Feb. 1, 1945.

DYED ACETATE RAYON!

finished with

ARIPEL-FS

Reg. U.S. Pat. Office

Has Excellent Fastness to Atmospheric Gases

Yes, acetate rayon dyed fabrics treated with double-action ARIPEL-FS are remarkably resistant to the fading action af atmospheric gases as proven by the "Gas Chamber" test.

ARIPEL-FS is also an effective softener and therefore works two ways in a one bath treatment —

- **Increases the gas-resistance of the color.**
- **Imparts a soft, smooth pleasing finish.**

ARKANSAS CO. INC.

Manufacturers of Industrial Chemicals for over 40 Years

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They All Hail

the CHAMP!

CHAMPS get the cheers, and DIASTAFOR de-sizing agent has been the champion in its field for 36 years. It's hailed on all sides as tops in quality and performance, cheered for the smooth, supple, flawless results it always gives.

You really meet a champ when you "meet" DIASTAFOR. So why not give it a trial now? Use it for cottons, mixed goods, rayons—see for yourself why it is used and recommended by chemists and mill owners throughout the nation.

It's easy to get acquainted with DIASTAFOR. Just ask our technical man, or write to—

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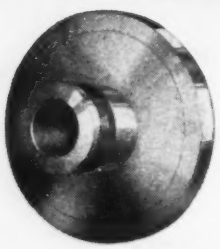
36 Years of Satisfactory Results

Worn Parts Reconditioned

actually outwear new ones



For Example: **Rollers.** We turn roller down and shrink on a Thomas & Skinner Long Life Tire made from special wear-resisting material. We also grind surface to correct diameter.

Thomas & Skinner Reconditioning Service restores cams, gears and other parts for full-fashioned knitting machines to their exact original size and shape. And one special processing gives T & S Reconditioned Parts a more enduring surface than the same parts had when new. Satisfactioned guaranteed.

T & S Products

We manufacture an extensive line of quality products for full-fashioned hosiery mills including Jacks, Narrowing Plungers, Narrowing Chain, Friction Springs, Snapper Springs, Magnetized Sinker Hooks, Cams, Running-in Machines, Locking Dials.

Thomas & Skinner Steel Products Co.

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NEWS OF THE MONTH

Rayon Price Confusion Clarified. Statements that postwar prices on rayon will be far below current levels are unfounded and misleading, according to information from the American Viscose Corp. Some of the statements had been due to confusing filament and staple rayon. To clarify the situation American Viscose Corp. currently quotes these prices:

50/14 viscose	$1.10
100/40–60 viscose	.75
100/40 viscose	.55
55/14 acetate	.98
75/20 acetate	.80
100/28 acetate	.73

The foregoing is for filament yarns; standard viscose staple is quoted at 25c. per lb., high strength 26c., acetate 38c.

Vinyl-Coated Light-Weight Voile. A very light-weight vinyl-resin voile with a total weight of only 2 oz. per sq. yd. that will stand 10 lb. hydrostatic pressure has been announced by Athol Mfg. Co. under the name of Terson Voile. At present it is produced in transparent form only, principally for rain covers for Naval officers' hats, but has been used experimentally in rainwear, clothing bags, shower curtains, and moist-resistant covers.

The Detection of Broken Threads. A device which makes it possible to automatically detect broken threads or similar defects in fabrics being knitted on warp-knitting machines, has been patented by Celanese Corp. of America. This patent, number 2346240, utilizes a photoelectric cell for detecting this fabric defect.

Interrelation of Speeds

(*Continued from page 109*)

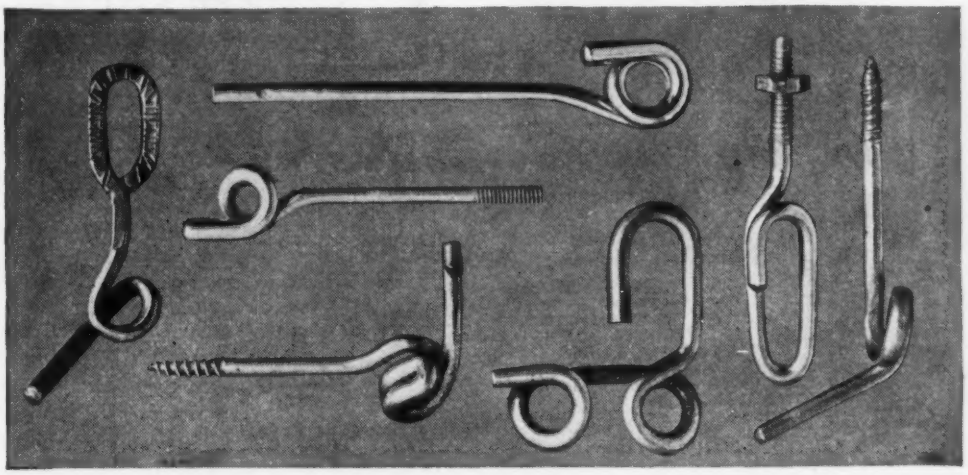
by the adoption of both expedients; or by the use of ball bearing spindles, provided this expedient does not increase fixed charges too much. With the present mechanism, the power required to drive spinning frames is all dissipated in friction or in heat—more than sufficient to heat the spinning room to a comfortable temperature in winter, even in a northern climate; and which in summer months presents a serious problem in air conditioning. In either case, there is a serious waste of power in the form of heat.

YARN TENSION. To show the effect on the yarn tension of increasing the speed and ring size, we shall cite two or three examples.

For instance, referring to Fig. 1 for 20s yarn, it will be observed that, with an increase in the spindle speed from

For highest YARN GUIDE *efficiency specify*

STAINLESS STEEL GUIDES



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WASHERS
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with

INDUSTRIAL STEEL *Surface Hardening Process...*

Being in constant contact with the yarn, guides must remain clean and free from rust. Stainless steel offers the best possible assurance of this.

Our exclusive, patented Surface Hardening Process provides a combination of corrosion resistance with a surface of unsurpassed hardness, that can be lapped, ground or polished. The hardness of the case is uniform, ranging between 850 and 1100 Vickers Brinell.

In addition to passing the Industry's supreme test on thread guides—Industrial Surface Hardened stainless steel offers attractive possibilities in bobbin rings, tensions, travelers, farming trumpets, stop motions, and any other part subject to extreme abrasion.

"The Specialists in Stainless Steel"

INDUSTRIAL STEELS, INC.

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Southern Representative
R. E. MASON
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IMPROVED TEAR RESISTANCE

Each Of These Reasons Has An Answer In Resins

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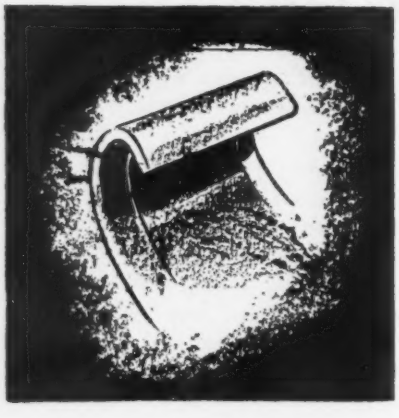
HOME OFFICES AND LABORATORIES: PEABODY, MASS.
Branch Plants: Newark, N. J. · Chicago, Ill. · Monrovia, Cal.



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A "U.S." RING TRAVELER

PIONEERING CONTRIBUTION!

The Bevel Edge on a Ring Traveler is distinctly a "U.S." contribution to smooth spinning and twisting. By eliminating the angular sharp edge "U.S." avoids pull, gives uniformity of tension, more even yarn, less wear, less "fly." This is only ONE of the MANY "U.S." features.

• SOLD UNDER THESE TRADE NAMES

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Traveler
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

U.S. RING TRAVELER CO

AMOS M. BOWEN
President and Treasurer

PROVIDENCE RHODE ISLAND

7,000 to 9,000 r.p.m. using a 2¼-in. ring and ⅝-in. bobbin, the tension is raised from 17.47 to 24.9 grams, or 42%. Increasing the speed to 11,000 r.p.m. raises the tension to 34.46 grams, or 97%. Or, again, if the ring size is increased from 1¾-in. to 2-in. with 1.2-in. bobbin at 9,000 r.p.m., the tension is raised from 18.92 to 23.62 grams, or 25%. With a 2¼-in. ring, the tension is raised to 27.46 grams, or 45%, and with a 2½-in. ring the tension is raised to 32.15 grams, or 70%.

Obviously, these variations in tension must affect the quality of the yarn produced. If larger packages are desired in order to reduce the number of piecings, they must be acquired with the acceptance of contingent factors more or less undesirable and the spinner must choose that expedient which fits his particular necessity best.

It is not pretended that the results deduced herein are of absolute validity, but we believe that the graphs and the method by which they are derived are sufficiently consistent with spinning practice to afford a safe guide to a judicious choice of ring sizes, bobbin diameters, spindle speeds, etc., for most conditions occurring in the spinning process.

To illustrate further the utility of the theoretical conception of this general problem, we shall consider 20s carded yarn, spun from 1 1/16-in. staple, and deduce all of the factors affecting the spinning functions and spinning costs. These factors are tabulated in Tables I and II.

Several examples, based on the maximum traveler speeds suggested by some of the machinery manufacturers,

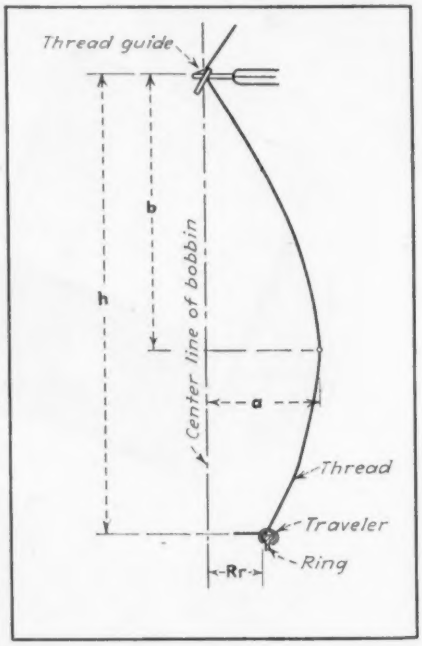
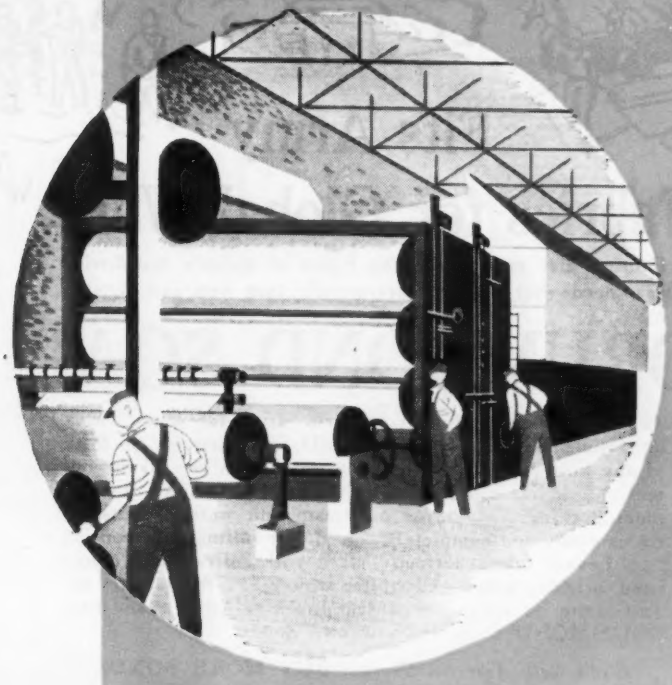


Fig. 2. Relationship between dimensions at yarn balloon used in Table I.

how the textile industry wrapped up a moldy problem



Moisture means mold. Mold makes costly inroads on profit. That's why the experience of the wrapping paper industry with Dowicide is interesting and important to many others confronted with mold problems.

Wrapping of soap has long been a major problem. Paper used for this purpose is subject to mold attack because of the high moisture content of soap. Moldy packages caused housewives to reject the product. To lick the problem, Dow technicians were called. They investigated . . . experimented . . . went into a huddle . . . came out with Dowicide.

The years have proved the success of Dowicide. Today, many high-moisture products are wrapped in Dowicide treated paper.

In fact, Dowicide has licked many other mold problems in the paper industry, as well as in other fields such as paint, textile, lumber, and many more. If you have a mold problem, write us to find out how Dowicide can help you.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

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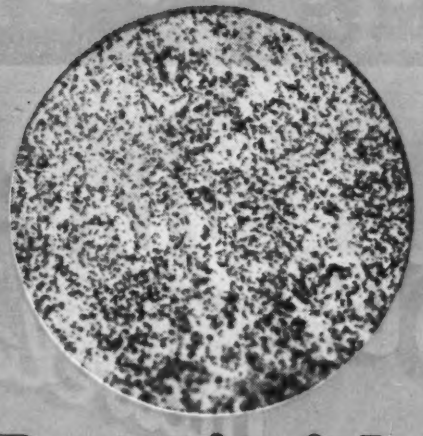

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Germicides and fungicides

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Fabrics that must meet the rigors of today's world-wide war, need every good characteristic that you can impart.

DRUMMOND SOAP

Gives fabrics a good start on their career for Army, Navy or civilian use. For DRUMMOND Soap contains no filler of any kind . . . It's a high-body product of low alkali content . . . It has a high binding quality that results in minimum flocking . . . Saves on steam and water because it rinses easily and completely . . . Better fulling and scouring . . . Leaves fabric perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . Want to try it? Just write us today for a free working sample and test DRUMMOND Soap on your own goods.

Don't Sell America Short— BUY MORE BONDS

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A NEW YEAR

Another chance to prove that the textile industry can win the battle of "manpower shortage" and "increased production."

Let Sterling help with your Spinning and Twisting problems.

Southern Representatives

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D. C. ANDERSON, Box 629, Cedartown, Georgia
SOUTHWEST SUPPLY CO., Box 1487, Dallas, Texas

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

are used in compiling Table I. These speeds are as follows:

2-in. ring at 11,000 r.p.m.
$2\frac{3}{16}$-in. ring at 10,000 r.p.m.
$2\frac{3}{8}$-in. ring at 9,000 r.p.m.
$2\frac{3}{4}$-in. ring at 8,000 r.p.m.

and for comparison,

$1\frac{3}{4}$-in. ring at 9,000, 10,000, and 11,000 r.p.m.
$1\frac{7}{8}$-in. ring at 9,000, 10,000, and 11,000 r.p.m.

Referring to Fig. 2, *a* is assumed to equal one-half of the gage of the spinning frame so that the threads at maximum ballooning will not theoretically collide with each other without separators. The distance from the thread guide to maximum displacement of the balloon is represented by *b*, and *h* equals the distance from the thread guide to the traveler.

Based on the preceding data, the comparative cost of spinning 20s yarn, from $1\frac{1}{16}$-in. staple carded, would be as per tabulation which follows, in which the rate of wages per hour is 55¢ for spinners, 61¢ for doffers, 54¢ for winders, and 48¢ for sweepers, cleaners, oilers, and roving men.

The tabulation in Table II suggests that for 20s yarn made from $1\frac{1}{16}$-in. carded staple, the minimum overall manufacturing cost is obtained with a spindle speed of 10,000 r.p.m., $1\frac{3}{4}$-in. ring, $\frac{1}{2}$-in. bobbin, and $6\frac{1}{4}$-in. traverse, No. 1 traveler and $3\frac{3}{4}$-in. gage, without separators. With $1\frac{7}{8}$-in. ring, at the same speed, but with $6\frac{1}{2}$-in. traverse, the cost is only slightly more.

Considered as a group, the use of $1\frac{3}{4}$-in. or $1\frac{7}{8}$-in. rings, at either 9,000 or 10,000 r.p.m., with either $\frac{1}{2}$-in. or $\frac{5}{8}$-in. bobbins, is apparently more economical than these same rings at 11,000 r.p.m., or than any of the larger rings. And probably with the use of separators the gage for the $1\frac{3}{4}$-in. and $1\frac{7}{8}$-in. rings could be reduced to, maybe, $3\frac{1}{4}$-in. or $3\frac{1}{2}$-in.

At 11,000 r.p.m. for $1\frac{3}{4}$-in. and $1\frac{7}{8}$-in. rings, and at the r.p.m. specified in the tabulation for 2-in. rings and larger, the critical speed of travelers may be exceeded; and consequently it might be necessary to reduce these spindle speeds appreciably, which in turn would diminish the production per spindle and so increase the number of spindles.

It will be noted from the preceding data that the yarn tension and weight of traveler varies as the square of distance *h*, Fig. 2, provided the speed, ring diameter, and bobbin diameter remain constant. Also, the yarn tension varies as the square of the spindle speed, provided the traverse, diameter of ring and bobbin, and distance *b* remain constant. Also, for $1\frac{3}{4}$-in. and $1\frac{7}{8}$-in. rings, the traverse can be increased one inch for each reduction in spindle speed of 1,000 r.p.m.

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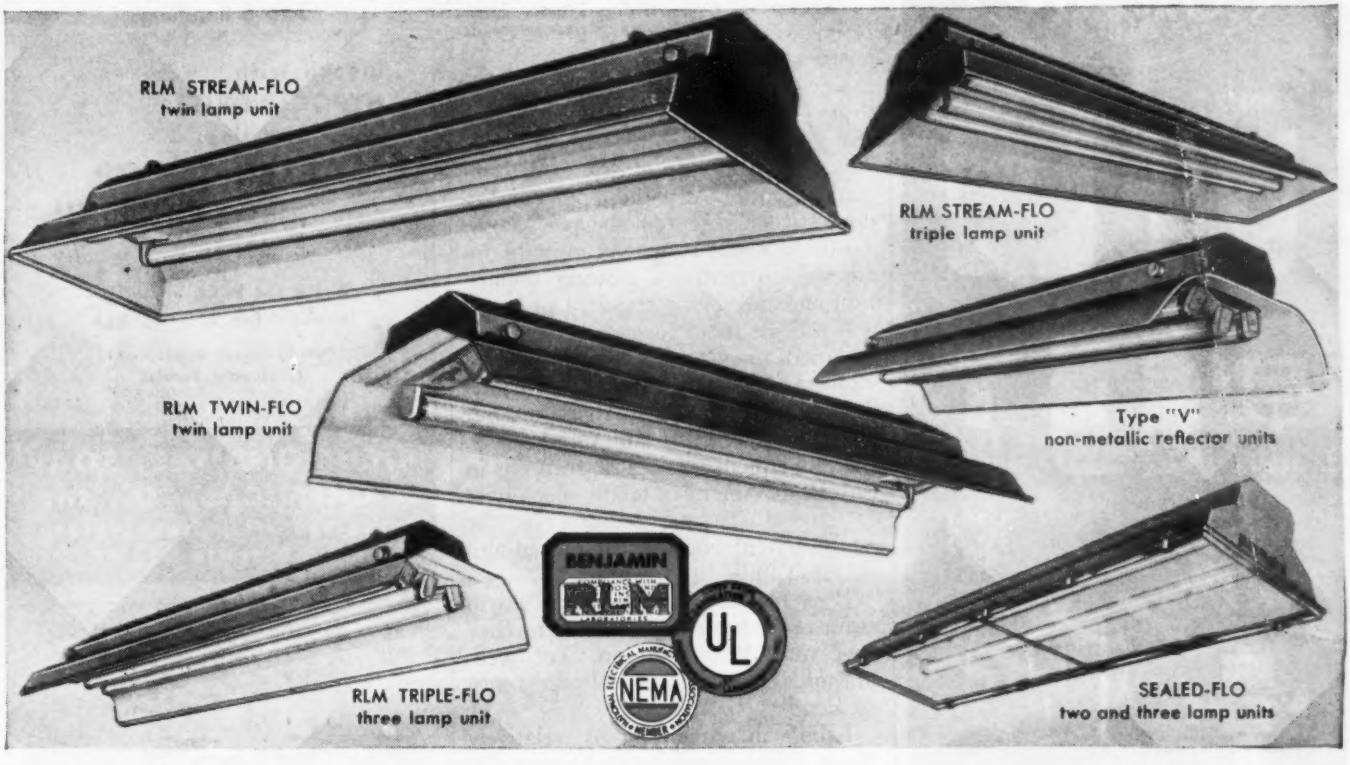

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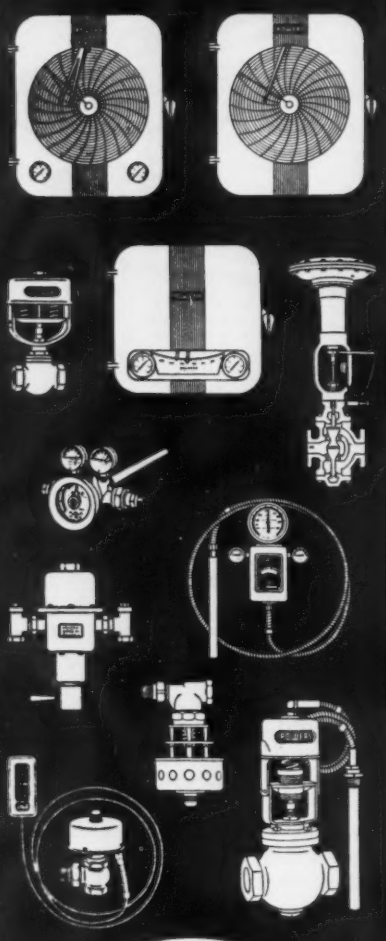

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Argentina's Textile Industry

(*Continued from page 71*)

Fly-by-nighters, however, were quick to seize the opportunity. They shipped much shoddy merchandise. Hence the label "*Industria Argentina*" suffered. Buyers in the markets mentioned will revert to former suppliers as quickly as possible. This, even though after the war Argentine mills do offer competitive price and quality.

Argentine mill men know this. Hence they count on very little export business in peacetimes. They hope, however, to continue selling something to near neighbors—Uruguay, Paraguay, Bolivia, and Chile. What Argentina's textile industry is determined to corner is a monopoly of the domestic market for cheaper goods. To do this, plant capacity must be increased. Argentina's growing population and improving standard of living will provide room for more expansion.

American spinners of fine yarns and weavers of special cloths may continue doing some business in Argentina; but the real opportunity for Americans to share in Argentina's textile future is in the sale of American textile machinery to Argentina, and possibly in the establishment of American-owned and operated mills in Argentina.*

It is unlikely Argentine mills will again make such quick profits as they have since War II began. Yet, well-run mills in Argentina will yearly earn dividends.

Labor in Argentina is relatively cheap, fairly abundant, and reasonably efficient. Relations between it and capital are as satisfactory as they are elsewhere.

At present there is unfortunately a misunderstanding between the Argentine and American governments. However, the common sense of the peoples of the two countries will soon straighten this out.

The position of Argentina's textile industry is sturdy and sound. Its future very promising. Let us hope Americans share in it.

* On the latter point, it appears that the future tariff policy of Argentina may prove an important factor.—*Editor.*

Report on Drying of Textiles. A report on "The Drying of Textiles" has been published by the department of information of the Textile Research Institute, Inc., New York. This represents a compilation of the results of a three-year program of textile drying research. At a later date, progress reports on the radiant energy drying study will be published by the Institute and will supplement this current summary.

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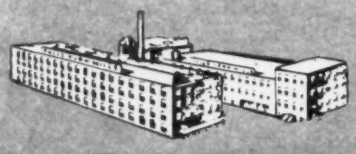

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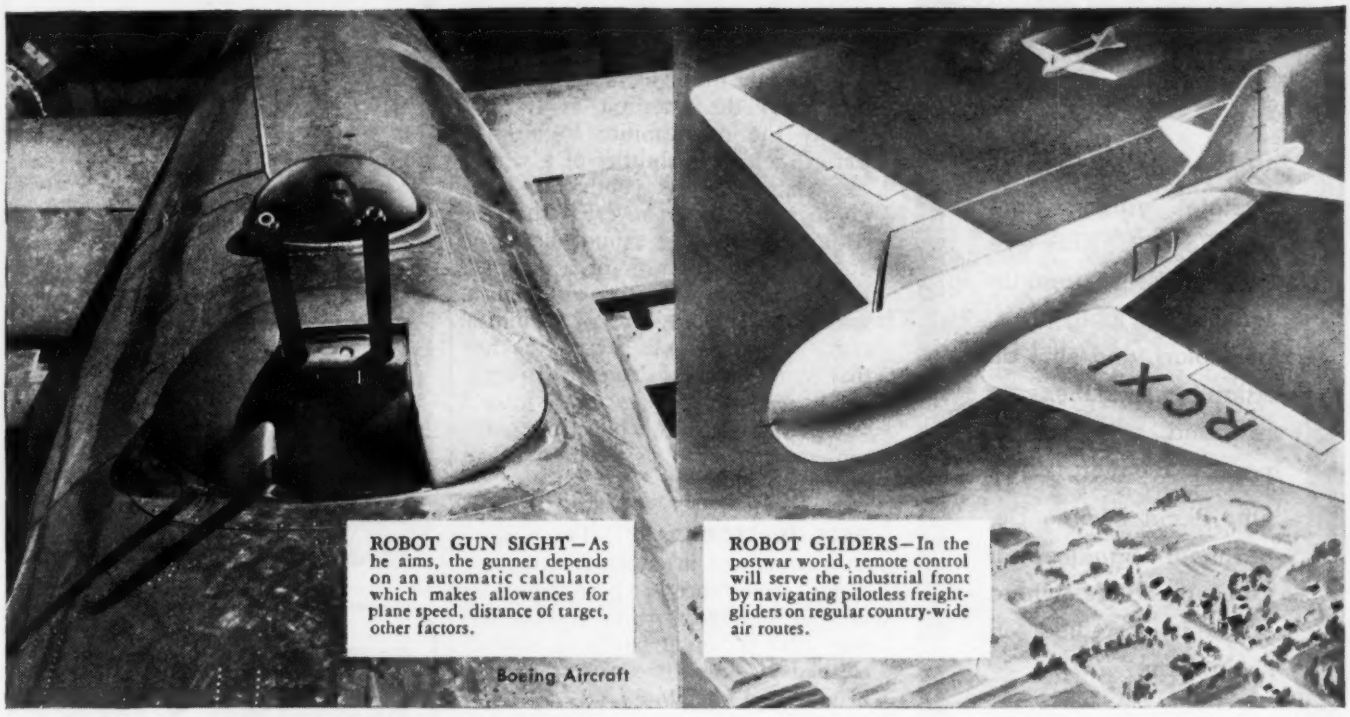

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Fabric Warmth

(Continued from page 97)

1,490. This great difference in warmth per unit of weight resulted from the relative thicknesses of the two fabrics. The lighter blanket was rather thick, while the basic construction of the heavier one was quite dense, and the nap was not very prominent.

Basic fabric construction does not appear to have too much importance as regards warmth retention in still air, although it should be dense enough not to allow slight currents of air to flow directly through the fabric. This brings up the question as to how closely the permeability to air and warmth-retaining abilities of a sample are related. Tests conducted on a number of samples revealed that the air-porosity reading cannot be taken as a positive criterion of a sample's heat-insulation properties, although in some cases it does serve as an indication. This is illustrated by the fact that many blankets decreased progressively in heat-retaining ability after a series of launderings, while at the same time resistance to penetration of air increased markedly.

FIBER IS SECONDARY. The type of fiber contained in a sample is of secondary importance in a new blanket, as previously stated; this, however, is not true after the item has been used or cleaned a few times. An all-wool blanket and one composed of a blend of rayon and wool were tested before and after ten commercial launderings. They were both of practically the same weight and each rated about 1,450 in the original state. After being given ten launderings, the blanket composed largely of rayon dropped to 1,268 while the all-wool item remained practically the same as it was in its original state. This is due to the characteristic resiliency of the wool fiber, which allows it to spring back to position after compression and thus to produce air pockets that aid in retaining heat.

A further instance as to the comparative resiliency of fibers is shown by the following results obtained on two blankets of approximately the same weight, tested in still air before and after a treatment simulating use:

Approximate fiber composition	*Original readings*	*Readings after "use" treatment*
5% wool 50% cotton 45% rayon	1,480	1,160
100% wool	1,448	1,290

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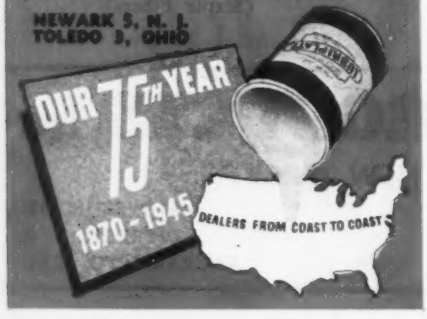

render them wool-like in appearance. At this writing, these finishes have not been proved to give the synthetics all the desirable characteristics of wool fiber; but it can be said that definite progress toward this end is being made.

Another point to consider is the ability of a blanket to retain warmth and at the same time to resist abrasive action. Two blankets were tested for warmth after ten launderings and were found to have approximately the same warmth coefficient. However, after they had each been given 400 single strokes on an abrasion (wear) test machine, one was not materially affected while the surface of the other one was completely ruined. This was due to the manner in which they were constructed; the nap of the poor blanket was actually removed during the abrasion test.

Single Twist

(*Continued from page 81*)

types, staples, and characters of cotton, as they appear.

FIGURING TWIST. Relevant factors not generally considered when determining twist per inch in single yarn with theoretical formulas are these: contraction, traveler speed, and bobbin diameter. In actual practice the delivery of the front roll in inches per minute divided by the spindle speed is often taken as the twist per inch in the yarn.

In a bulletin of the Cotton-Textile Institute, reprinted from *Textile Research*, July, 1942, Malcolm E. Campbell indicated that the actual twist on warp yarn with a 4.5 twist multiple is 6 to 7% higher than calculated by the spindle-speed front-roll delivery method and that the higher the twist multiple, the greater the percent of increase.

By examining the chart shown in Fig. 5, it can be seen that at low twists the error is negligible, but at higher twists the difference (due to contraction) is considerable. Also it was stated that the speed of the traveler lags behind that of the bobbin just enough to wind the yarn on the bobbin, and that the larger the package the fewer turns required to wind a given length of the yarn onto the bobbin.

The lag in traveler speed is proportional to the reciprocal of the circumference of the bobbin at the point of winding. Thus the correction for winding which must be deducted can be expressed as $1/\pi b$ where b is the diameter of the bobbin in inches.

The correct formula for finding twist presented is as follows:

$$T = \frac{S}{\pi R r L} - \frac{1}{\pi b}$$

where

T = Turns per inch in yarn
S = Spindle speed
L = Length of twisted yarn to untwisted length
R = Front-roll speed
r = Diameter front roll in inches
b = Diameter bobbin in inches
π = 3.1416

$$L = \frac{2\,Y\,G}{H\,K}$$

where

Y = Actual count of yarn
G = Draft change gear used
H = Actual size of roving
K = Gearing draft constant

This formula gives in effect the ratio between the actual draft determined from the sizes of roving and contracted yarn, and the theoretical draft from the roll gearing.

$C = 100\ (1 - L)$ is an equation used to determine the contraction in yarn based on the untwisted length of yarn.

To illustrate the use of these equations, the following calculations for actual twist can be examined. Given average size of yarn 29.355; spindle speed, 9,500 r.p.m.; average size roving, 5.67 hank; front roll speed, 113 r.p.m.; draft gear, 39 teeth; diameter front roll, 1 in.; draft constant, 441.6; and diameter bobbin, 0.875 in.

$$L = \frac{(2)\ (29.35)\ (39)}{(5.67)\ (441.6)} = 0.914 \text{ in. twisted yarn to untwisted yarn.}$$

$$T = \frac{9500}{(\pi)\ (113)\ (1)\ (0.914)} - \frac{1}{(\pi)\ (0.875)} =$$

$$29.28 - 0.36 = 28.92 \text{ turns per in.}$$

$C = 100\ (1 - 0.914)$

$C = 100\ (0.086)$

$C = 8.6\%$

As calculated the usual way without allowing for contraction and winding, the result would be 26.76 t.p.i., which is 7.5% less than actual twist. In other words, instead of using a twist multiplier of 4.94, the yarn is actually spun with a multiplier of 5.34.

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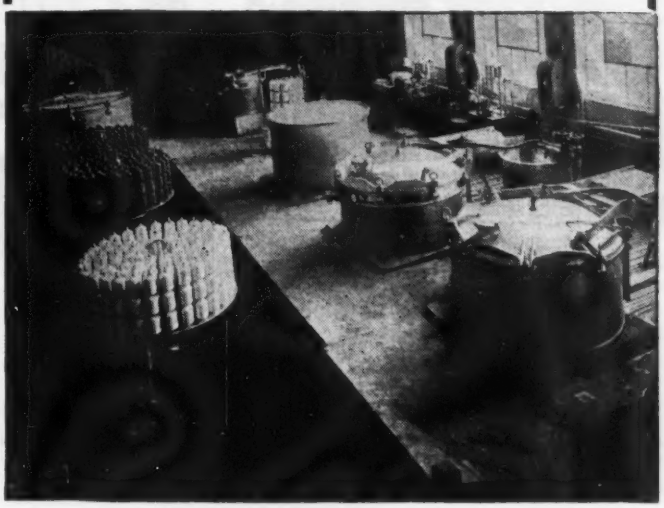

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Loomfixers' MANUAL

COTTON SECTION, Part 2
Chap. III (Cont.)

LOOM LEATHERS

By IVAR MOBERG

A LEATHER PICKER of the so-called "doll-picker" type is shown in Fig. C 21. This type of picker is inexpensive and durable, but can be used only on plain looms or on the left side of automatic looms. The necessity of two different types of pickers on automatic looms has reduced the popularity of this picker.

The rubber-fabric type of loop picker, shown in Fig. C 22, and the leather loop picker, shown in Fig. C 23, are universally used on automatic looms today. The latter picker was originally built for the right and for the left side of the loom, but recent developments have made it interchangeable.

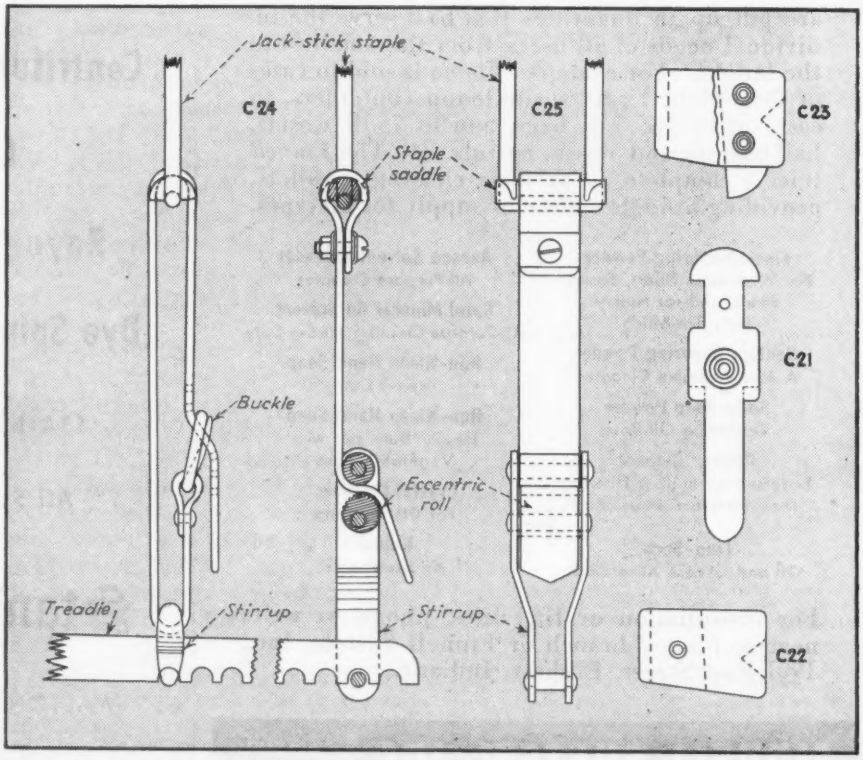
Whether the pickers are of the rubber-fabric type or of the leather type, they should be bought with a shuttle-point hole already made. In this case the hole will always fit the shuttle point, and this fact is very important, both to the life of the picker and to its performance. Cutting the hole with a jack knife, as many loomfixers do, is very poor practice and serves no good purpose.

Much discussion has been heard as to whether or not the picker screw should be placed in the back or in the side of the picker. In the writer's opinion the screw should be placed in the side for the following reasons:

1. The screw is less likely to split the picker stick when placed in the side.

2. The screw is nearer the head of the picker; thus it will hold the picker more secure.

(Continued on page 194)



The so called "doll-picker" is shown in Fig. C21, a rubber fabric type in Fig. C22, and a leather loop picker in Fig. C23. Fig. C24 shows the regular type of jack strap, whereas Fig. C25 illustrates a recommended type.

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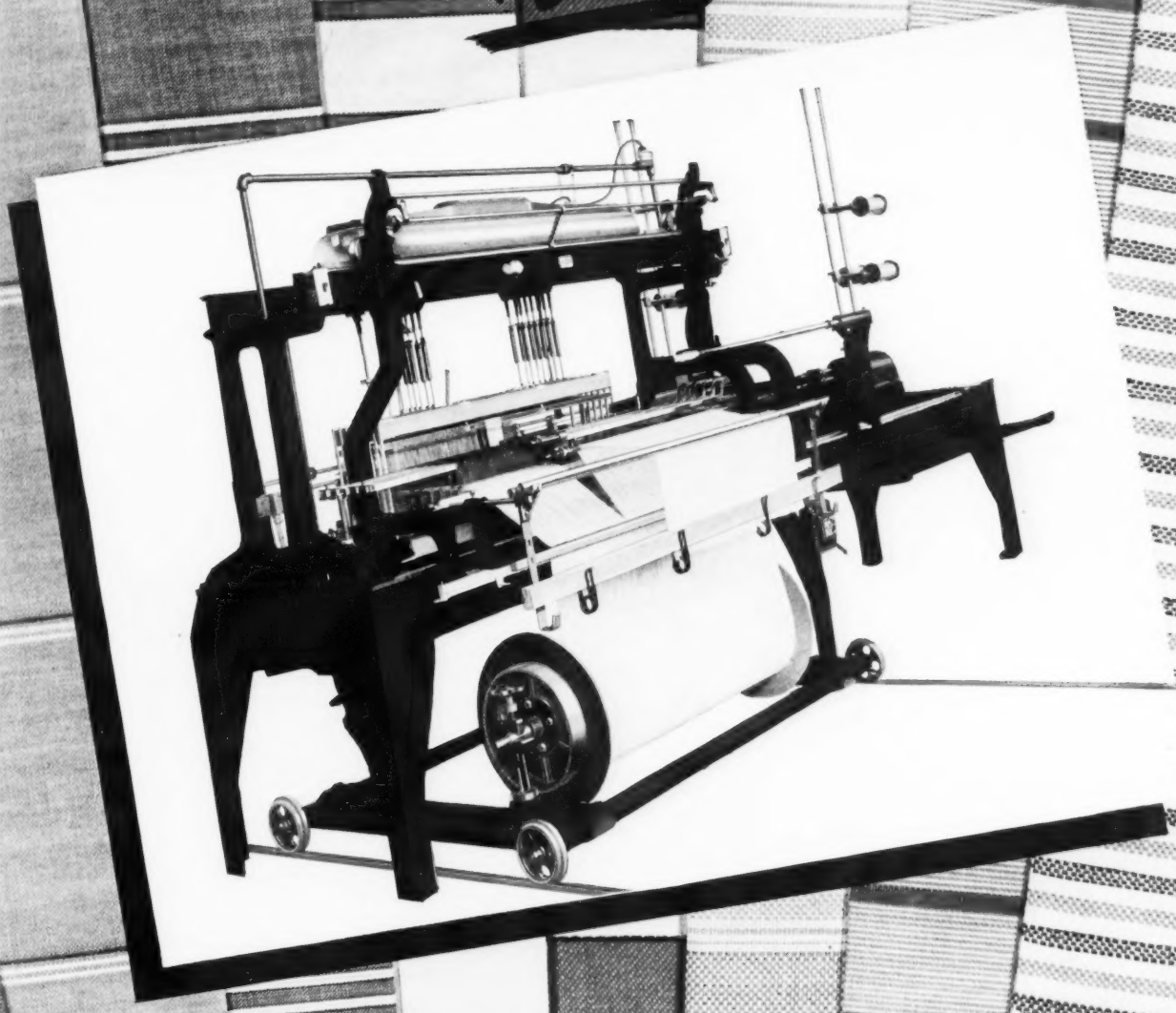

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FULL-FASHIONED MACHINES

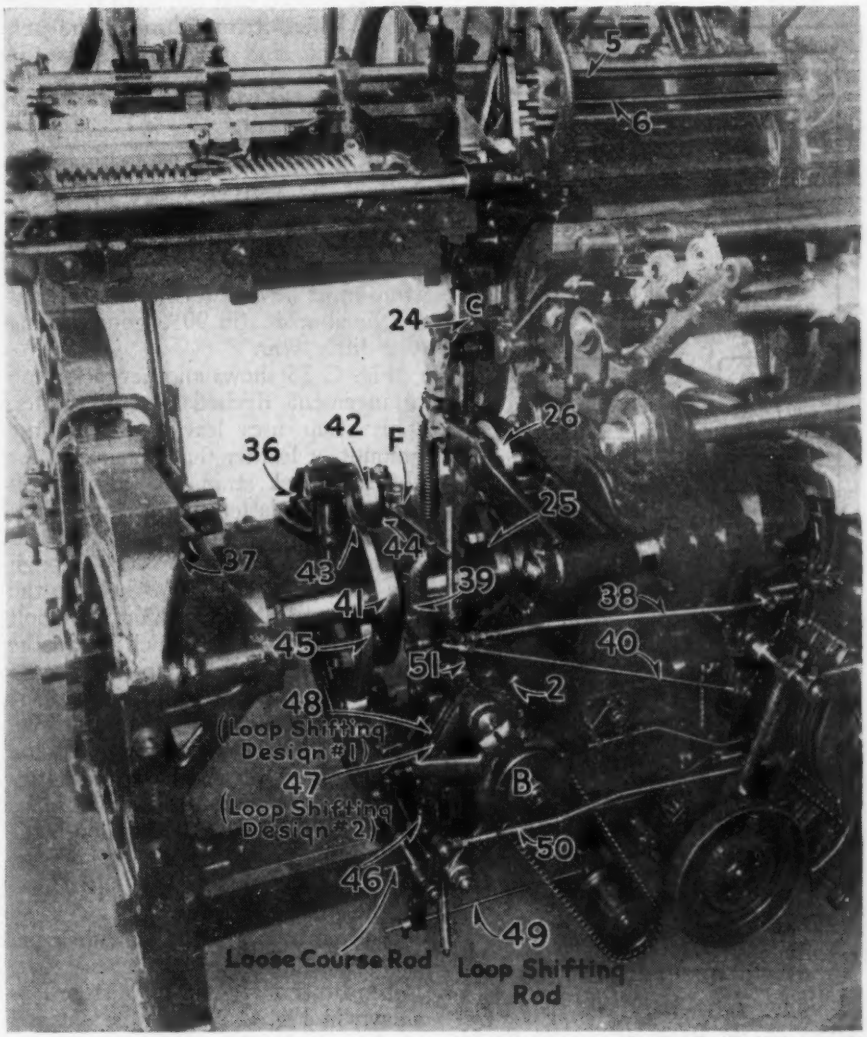
Chap. XXIV (Cont.)

READING CENTER LACE ATTACHMENT—TYPE 29

By WALTER A. SIMOND

THE SHIFTING UNIT F, Fig. F-78, is set to prevent movement of the narrowing and carrier rod spindles during lace or net forming operations, and roller 37 must be shifted clear of its narrowing ratchet cam. The independent chain motion lever to which rod 38 is connected should be set so that when a button on the independent chain comes under it, the regular chain motion lock lever will be tripped, and the adjusting screw on the trip lever 39 should cause unit F to be set in motion and clear roller 37.

Regular narrowing buttons on the main chain motion should not affect



Courtesy Textile Machine Works

Fig. F-78. The shifting mechanism of the center lace attachment.

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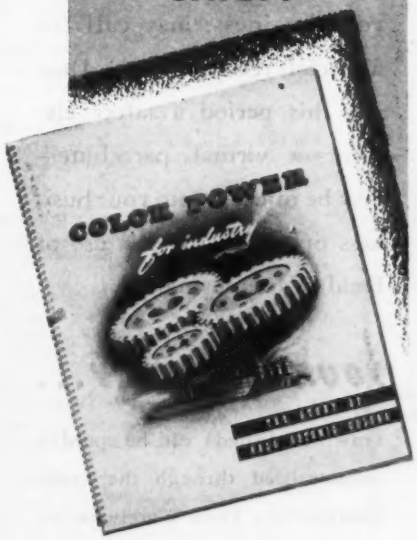

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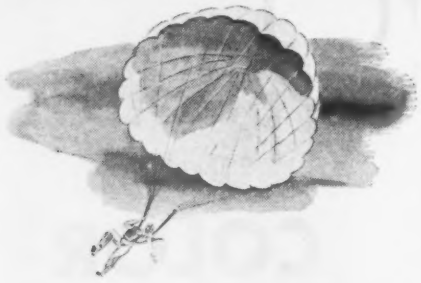

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the narrowing ratchet roller shifting unit F. When buttons on the independent chain pass under lever 51, they should move the brush shifting unit to the narrowing speed position by means of rod 40 as shown in the illustration.

Cam 41, Fig. F-78, is set on the camshaft to cause correct lateral movement—approximately ⅛ in.—of the narrowing ratchet lifting roller 37. And the timing for cam 45 on cam 41 should be exactly the same as for the regular chain motion.

Lace control rod 50 should be adjusted so that when a start button comes under the lace control lever on the main chain motion, the independent chain motion ratchet pawl will be allowed to drop into a tooth of the ratchet, and thus set the independent chain motion in action as a result.

When setting buttons on this chain use gage No. 15850, as shown in Fig. F-79.

Be sure that the correct chain button will go under lift-lever 2, Fig. F-78, when the design mechanism is started in operation.

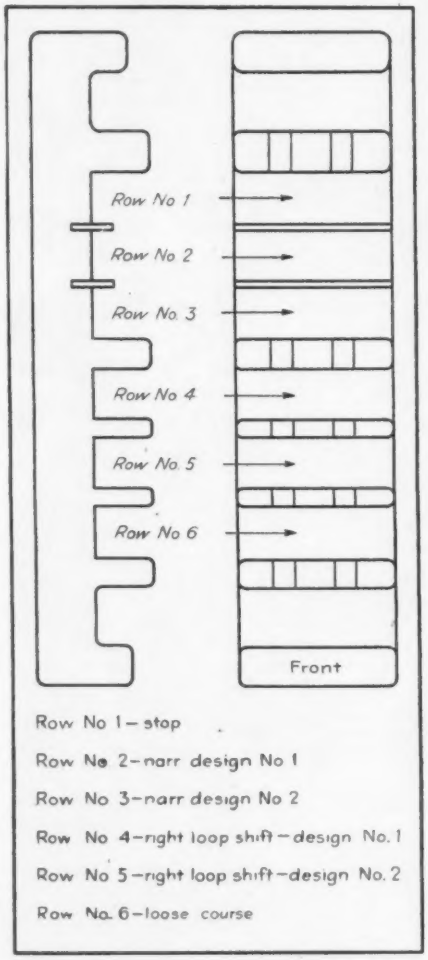

Row No 1
Row No 2
Row No 3
Row No 4
Row No 5
Row No 6
Front
Row No 1 – stop
Row No 2 – narr design No 1
Row No 3 – narr design No 2
Row No 4 – right loop shift – design No. 1
Row No 5 – right loop shift – design No. 2
Row No. 6 – loose course

Fig. F-79. Gage No. 15850 for setting buttons on the independent chain motion. Buttons on the inside row of the independent chain are so placed to stop the chain.

Loomfixers' Manual

(*Continued from page 190*)

3. The screw is easier to insert and safer to manipulate if it is placed at the side of the picker stick.

Regardless of where the picker screw is placed, its head must be flush with the picker loop. It must under no condition protrude above the loop made by the picker.

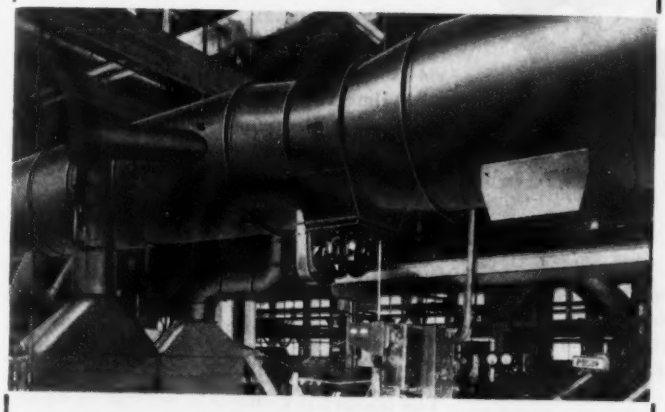
When placing the loop pickers on the stick, the latter must be well rounded on the back and have a broad, flat surface on the front. Otherwise, the picker may take an angular position on the picker stick and an imperfect pick will follow.

JACK STRAP. Of all the straps on a loom the jack strap is probably the least satisfactory. These straps are generally in loop form and equipped with a buckle for adjustment, as shown in Fig. C 24. There are two serious disadvantages of using such a strap. First, the strap employs twice the amount of its useful leather. It will be noticed that the strap is double except where it runs through the jack stick staple and the stirrup. As the strength of the strap is equal to its weakest point and this is at its end loops, the double strap between these points is just so much wasted material. Second, an extremely weak point is the hole for the buckle pin. In nine cases out of ten the holes tear out; since the hole needed is torn out, the strap must be discarded while the rest of the strap is still 90% good, having very little wear.

Fig. C 25 shows another jack strap arrangement devised by the writer. This strap uses less than half the amount of leather that is required for the loop jack strap. In addition, it outlasts the latter many times since there are no holes to tear out. In this arrangement a short loop runs through the staple and the end is held to the strap by a belt-bolt, or an ordinary bolt with large washers which span the entire width of the strap. The strap runs singly from the staple in the jack stick to the stirrup on the threadle. Here it runs between two rolls, the lower of which is eccentric and corrugated over approximately half of the circumference. This corrugation holds the straps securely because of the weight of the threadle. A slight pull on the strap will free it.

The stirrups are easily made from broken heddle rods having cast iron rolls. Broken regular loop straps, as shown in Fig. C 24, may be cut and used again in this new jack-strap arrangement.

Axial Flow Fans for Practical Installation



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MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on this page may secure copies with time-saving coupon on page 198. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y., being sure to give your name and company connections.

1. A file of incentive plans, intended for overcoming most obstacles to good industrial relations and bringing management and labor closer together, is being offered by Royal Incentives. This file contains information on eight different incentive plans and has much information concerning how these incentive plans may be coordinated with a merit incentive system.

2. Industrial greases are covered in a new booklet just issued by E. F. Houghton & Co., entitled "Houghton's Industrial Greases." This booklet covers various types of industrial greases ranging from the lime base, soda base, mixed base, to special textile greases which have been developed especially for various types of textile processing machines.

3. "Wet Processing Agents for Every Textile Application," is the title of a folder being offered by Burkart-Schier Chemical Co. This folder lists the various agents for wet processing of hosiery, underwear, yarns, piece goods, and woolens.

4. Chemical and physical properties of cellulose acetate are covered in great detail in a 28-page booklet being offered by Hercules Powder Co. Aside from offering much technical information, various uses of cellulose acetate are listed.

5. A weekly "pay-as-you-go" tax deduction chart is being offered by Thomas & Skinner Steel Products Co. This chart covers the amounts to be deducted for "pay-as-you-go" taxes from salaries and wages and covers exemptions ranging from 0 to 10.

6. Application of stainless steel to various phases of the weaving and spinning of textile fabrics is covered in the November issue of the *Electromet Review*, published by Electro Metallurgical Co. Such items as stainless-steel reeds, heddles, cones, etc. are described. Also included in this issue of the Review is a full-color photograph showing worsted fabrics being dyed in stainless-steel machines.

7. Air conditioning for comfort is discussed in a booket entitled "How to Plan Your Postwar Air Conditioning Today," offered by Westinghouse Elevator Co. The booklet is prepared as a guide to various considerations that should be given in plans for air conditioning in the future.

8. Fluorescent lighting fixtures and hanger fixtures are discussed in Bulletins No. F-80 and F-82, being offered by Day-Brite Lighting, Inc. These bulletins describe the units and list prices.

9. A high-torque mechanical flowmeter is described in publication 3010-31, being offered by Cochrane Corp. The tilting U-tube mechanical-type meter is illustrated and cross sections are shown showing its working parts.

10. Overhead handling equipment in textile mills is illustrated and described in the November issue of *The Swirling Column*, published by The American MonoRail Co. Numerous photographs taken in various mills show how cloth rolls, beams, jack spools, and gray goods are handled.

11. Arc-welding electrodes are discussed in Bulletin No. L6348, being offered by Allis-Chalmers Mfg. Co. The bulletin gives a complete description of each electrode in the Allis-Chalmers line and also includes separate charts of physical properties of weld metal for each electrode, as well as recommended current values.

12. "Geon-Hycar Blends," is the title of Technical Bulletin PM4, issued by The B. F. Goodrich Co. This bulletin sets forth the various advantages of Geon resins with Hycar oil-resistant synthetic rubber and points out various uses of the resulting plastic. This bulletin suggests that it may prove satisfactory for spinning cots and for roll coverings where oxidation, oils, and heat are encountered.

13. Damage to textile factories by the recent hurricane is described in great detail and is also well illustrated in the November issue of *Factory Mutual Record*, published by Associated Factory

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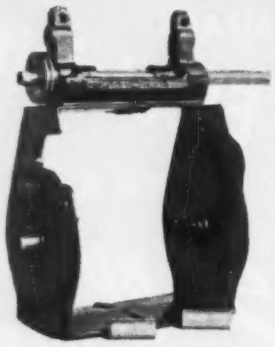

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Mutual Fire Insurance Companies. This article describes how many plants prepared for the hurricane, and how many of the safeguards employed prevented extensive damage.

14. Counting scales for industry are described and illustrated in a bulletin just offered by The Howe Scale Co. Various types of precision weighing and counting scales are described.

15. Stainless steel electrodes are covered in a 10-page bulletin being offered by Page Steel & Wire Division of American Chain & Cable Co. Properties of various types of stainless steel electrodes and tables covering the standard grades being offered, along with general operating instructions, are covered in this bulletin.

16. "Temperature Control Systems for Slasher Cylinders," is the title of an article appearing in the September-October issue of *Instrumentation*, published by the Brown Instrument Co. This article covers in great detail the Moist-o-Graph. Illustrations are included and a diagrammatic drawing shows how the various units are connected.

17. Tachometers of the individual mounting type are described in Bulletin No. 44-1, issued by Jones Motrola Co. This bulletin covers the use of tachometers and also illustrates the types being offered and includes technical details covering mounting dimensions.

18. A nomogram to help in the dyeing of fine and coarse filament rayons and spun rayons to the same shade is illustrated in the November issue of *Dyestuffs*, published by National Aniline Division of the Allied Chemical & Dye Corp.

19. Saco-Lowell Bulletin for September, published by Saco-Lowell Shops, describes a rayon drawing frame specially designed for handling synthetic fibers ranging from 1½ to 3 in. in length. Mill men will also be interested in an article entitled, "The Textile Mill Supply Room."

20. Materials handling equipment, including lift trucks, skid platforms, stackers, and like equipment is shown and described in general catalog No. 22, just issued by the Lewis-Shepard Products Co.

21. "Dyeing and Printing Fiberglas" is the title of No. 1 of a series of booklets on Aridye pigment colors, issued by Aridye Corp. This booklet describes the methods which have been developed for applying resin-bonded pigment dyes to Fiberglas fabrics to be used for draperies and for other decorative purposes.

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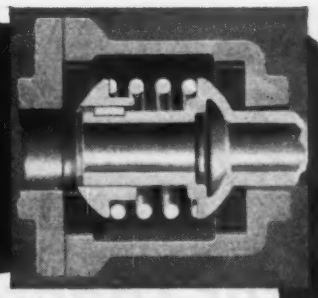

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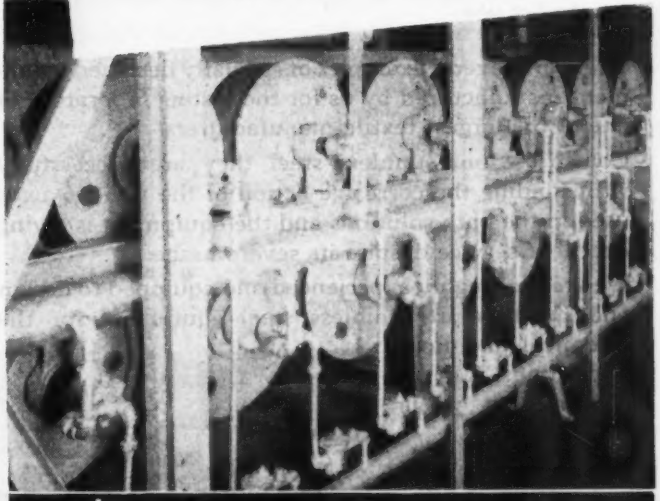

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NEWS ABOUT Suppliers

H. W. Butterworth & Sons Co., Philadelphia, have acquired the good will and all the manufacturing rights of the Textile Finishing Machinery Co., Providence, R. I., as reported briefly in these columns last month. According to Harry W. Butterworth, Jr., president of the first-named company, the manufacture of textile machinery will be renewed at the Providence plant and expanded as rapidly as conditions permit. The sale was made by Jacob Ziskind, Fall River, Mass., who purchased the assets following a receivership at the close of 1943, at which time the company was employing 800 persons in the completion of Navy contracts. Mr. Ziskind stated that the present sale includes a machine shop building with about 85,000 sq.ft. of floor space, machinery and other equipment. Several other buildings aggregating about 150,000 sq.ft. of floor area were not included, but negotiations are under way for their sale to new industries. Mr. Butterworth, whose own company was established in 1812, stated that the additional facilities acquired at Providence will provide for expansion needed in view of the world-wide demand for textile machinery. Present office and other employes will be retained at Providence, and Edward Wharmby will continue as plant manager. The Butterworth company plans to replace obsolete and worn out tools now at Providence with modern equipment in preparation for the post-war period.

The Atwood Machine Co., Stonington, Conn., has appointed William M. Fraser, vice president and assistant general manager in charge of engineering and manufacturing, to direct the activities of the Atwood sales department as well. The company has announced the resignation of H. M. Bailey, Jr., as vice president and sales manager.

Draper Corp., Hopedale, Mass.—L. Marshall Newell, who has been with WPB in Washington for 2½ years, has returned to Hopedale as northern representative of Draper Corp. Mr. Newell went to Washington as chief of the Weaving Machinery Section and was later promoted to chief of the Textile Machinery Branch of the WPB. The Draper Corp. has purchased the physical assets of the Rhode Island Warp Stop Equipment Co., Pawtucket, R. I. Draper will continue manufacture of the KA electric warp stop as in the past.

EDMUND A. GEORGI, formerly manager of technical development, Papermakers' Chemical Department, Hercules Powder Co., who has joined the Research and Development Department of the Pennsylvania Salt Mfg. Co. as director of special products division, including laboratory and field work.

Standard Mill Supply Co., Providence, R. I., has appointed Hamilton P. Dunbar, formerly with the Abbott Machine Co., Wilton, N. H., to be traveling representative covering all of Maine, Vermont, New Hampshire as well as eastern Massachusetts.

North Carolina Hickory Co., Reidsville, N. C., which had its plant destroyed by fire on June 15, has begun operations in its new plant.

Durene Association of America, New York, has elected to membership Southern Mercerizing Co., Tryon, N. C., and Sellers Mfg. Co., Saxapahaw, N. C.

The Procter & Gamble Co., Cincinnati, Ohio, is ready to

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*Figure does not include "Cotton Week" posters (more than 300,000) and other direct-mail pieces, nor publicity features on Cotton carried by more than 1,200 newspapers.

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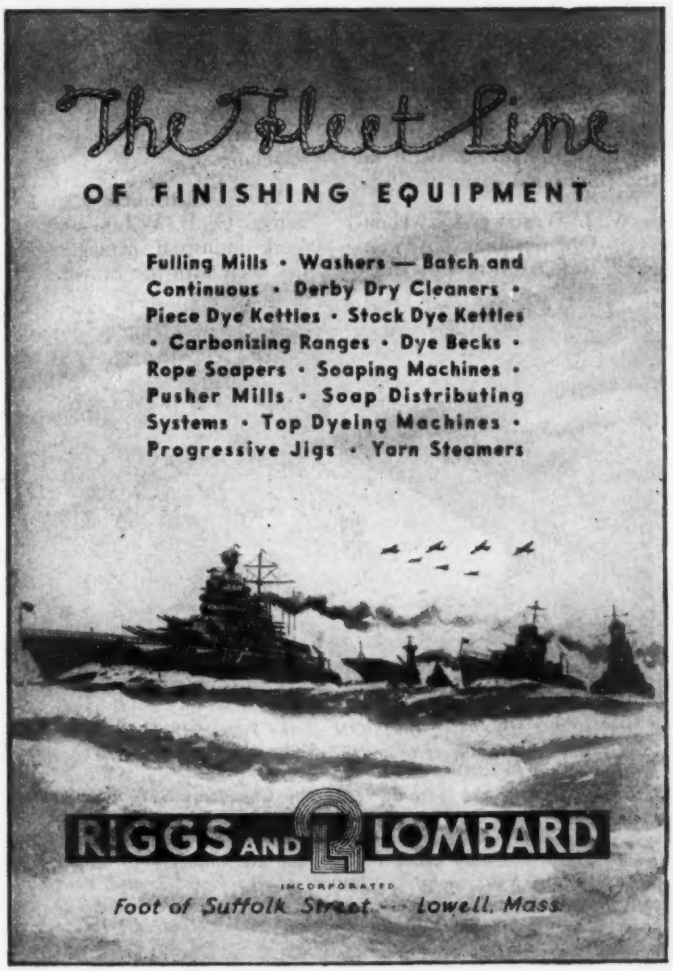
Scales


The Fleet Line
OF FINISHING EQUIPMENT
Fulling Mills • Washers — Batch and Continuous • Derby Dry Cleaners • Piece Dye Kettles • Stock Dye Kettles • Carbonizing Ranges • Dye Becks • Rope Soapers • Soaping Machines • Pusher Mills • Soap Distributing Systems • Top Dyeing Machines • Progressive Jigs • Yarn Steamers
RIGGS AND LOMBARD
INCORPORATED
Foot of Suffolk Street · · · Lowell, Mass.

Where Do You WANT THE AIR?

Adjustable outlets make Parks Traveling Cleaners

- MORE FLEXIBLE
- MORE EFFICIENT

Volume of air may be regulated, where the air is aimed may be adjusted. Both air streams may be "spotted" in — or directly down — or slightly out; each side independently of the other.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

introduce several new products and improvements in present brands when manufacturing conditions and raw materials permit. Plans for necessary plant changes looking to postwar production needs have already been drawn and construction will start as soon as war conditions permit.

Southern Electronics, Inc., specializing in the sale and installation of industrial and commercial electronic equipment, has opened offices in Greensboro, N. C. D. E. Atcheson, of St. Augustine, Fla., is secretary and treasurer of the corporation. He was formerly attached to the Fourth Service Command as a civilian radio engineer. The firm will handle installations for textile curing and color processing, and also parts for electronic equipment.

John Black Co., 212 Summer Street, Boston, Mass., has been named as representative of Charles H. Jones, Sydney, Australia, wool house.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has appointed C. Robert Fay as comptroller, succeeding Stuart M. Campbell, resigned. Mr. Fay has been secretary of the policy committee on war contract terminations for Westinghouse Electric & Mfg. Co. since he returned last August after serving as consultant to WPB on the Controlled Materials Plan.

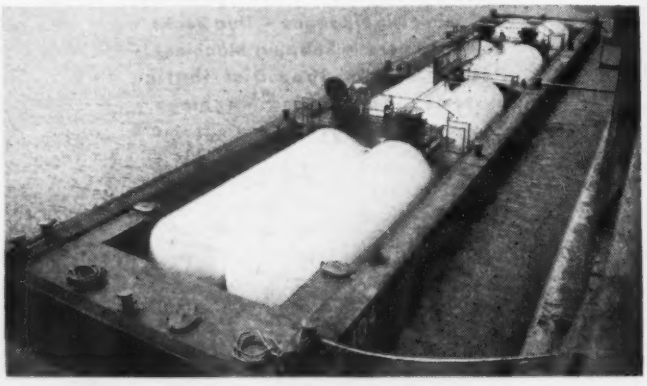
W. J. Westaway Co., Hamilton, Ontario—John C. Westaway was recently appointed vice-president and managing director of the W. J. Westaway Co., Ltd., throughout the province of Quebec and the Maritime Provinces. Mr. Westaway, who will operate from the Montreal offices of the firm, will continue as vice-president. He will also remain as vice-president of Sonoco Products Co., of Canada, Ltd., Brantford, Ont. He is a son of the late W. J. Westaway, who founded the company, and has been at the head office since 1932.

Standard - Coosa - Thatcher Co., Chattanooga, Tenn., and Philadelphia, Pa., has appointed Carl L. Miller & Sons of Utica, N. Y. (P.O. Box 105), as sales representatives for Standard mercerized yarns in the state of New York. They will replace Rowe-Gardiner Co., Amsterdam, N. Y.

American Viscose Co.'s plant, Roanoke, Va., has secured a second army ordnance contract for the assembling of more than 1,000,000 fuse boosters with an average daily production of 8,000. Special machinery was rushed to Roanoke and in less than a week was set up and ready for operation.

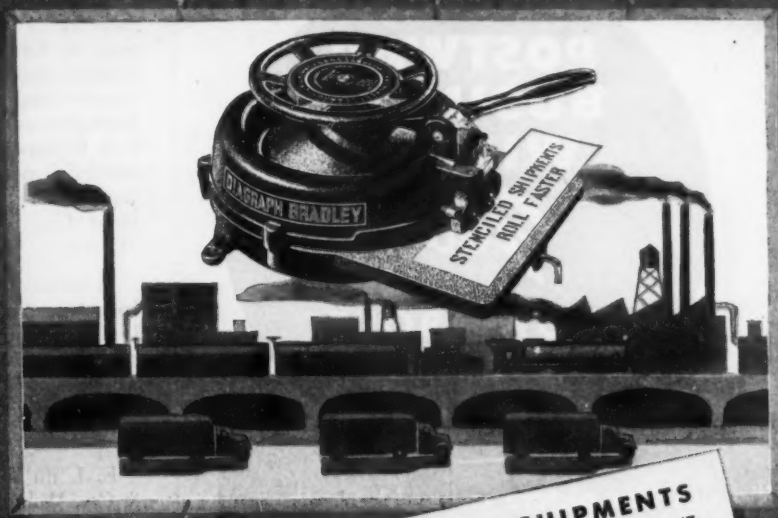
Commercial Factors Corp., New York, has elected George J. Schatz, Harold Bick, and Anthony J. David as assistant secretaries.

Brown Instrument Co. has named O. B. Wilson as New York industrial manager. He has been with the Brown com-



COLUMBIA CHEMICAL DIVISION of the Pittsburgh Plate Glass Co., is now shipping liquid chlorine from its plant at Natrium, near New Martinville, West Va. to Charleston, West Va., where it is discharged into pipe lines of the Carbide & Carbon Chemicals Corp. plant to be used in war work. This one shipment of 380 tons of liquid chlorine is sufficient to purify a year's supply of water for a city of 3,000,000 persons. The company pioneered in tank car shipment of chlorine in 1941 and was instrumental in removal of the Coast Guard limitation of chlorine river shipments to one-ton containers. The tanks on the barge shown above will withstand internal pressures of 300 lb. per sq. in., and many safety devices are installed.

STENCILED SHIPMENTS ROLL FASTER



STENCIL ADDRESS YOUR SHIPMENTS

STENCIL MARKED SHIPMENTS WITH EASILY READ, PERMANENT STENCILED MARKINGS—roll faster and costly delays in transit are eliminated.

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WORLD'S OLDEST AND LARGEST MANUFACTURERS OF STENCIL CUTTING MACHINES

DOUBLE OR NOTHING!

Each Dary Ring Traveler produced today under the famous 45-year old Dary Process is the precise "double" of its predecessor — "nothing" less is accepted!

This means consistent superiority —a superiority that assures highly successful, completely economical spinning and twisting.

Invite your nearest Dary representative to discuss your spinning or twisting problems with you NOW!

THE DARY RING TRAVELER CO.

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PROCESSED SYMBOL OF SUPERIORITY

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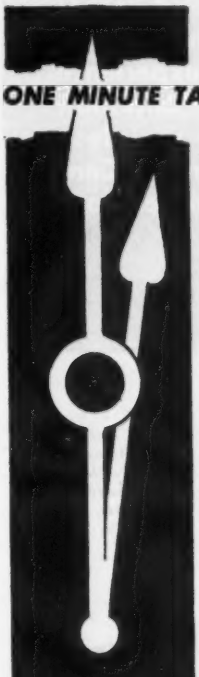
H. REID LOCKMAN, BOX 515, SPARTANBURG, S. C.

ONE MINUTE TALKS ON



Easier Way To Clean Humidifying System

When troublesome slime deposits clog piping, pumps, spray heads, drains to impair the operating efficiency of your humidifying system, all you need to do is to take these two corrective steps.

First, clean out system thoroughly by circulating a solution of Oakite Slime Remover. Then add recommended quantity of Oakite Airefiner to the new water supply. This specially-designed material effectively CONTROLS slime formation . . . helps you keep your humidifying system at peak efficiency.

Our nearby Technical Service Representative will gladly help you on this work. Write to address below TODAY!

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OAKITE Specialized CLEANING

MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

TEXTILE DYERS

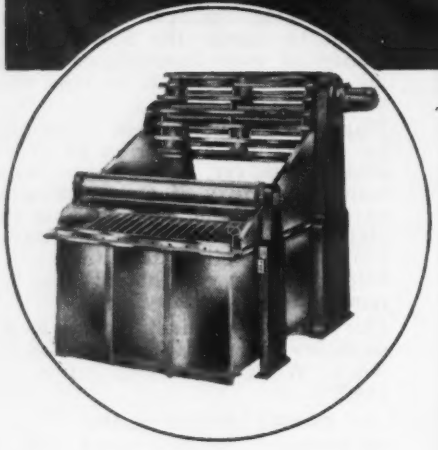
POSTWAR BUSINESS WILL BE *Good*

HOW ABOUT POSTWAR PROFITS?

The postwar picture is bright for the textile dyeing industry. There will be business, plenty of it. But the question of profit will depend more than ever on your equipment.

Blickman stainless steel dyeboxes, and dyebox linings are made to cut costs. They make cleaning a matter of a quick rinse. They reduce your water and steam cost. They end spotting, discoloration, fabric waste. They assure the kind of dyeing job that gets a fair price and holds customers.

Ask about Blickman round corner construction—about the new fully-enclosed dyebox, about the experience of hundreds of dyers with Blickman dyebox linings and other stainless steel textile dyeing equipment. Consult Blickman *before* you order your postwar equipment.



Stainless Steel Dye Boxes for dyeing woolens, worsted, cotton, rayon and mixtures. Plate #7019.

Send for folder "3 for 5" for full description of how Blickman dyeboxes and linings will help you cut production costs.

S. BLICKMAN, INC.

401 GREGORY AVENUE • WEEHAWKEN, N. J.

SPECIALISTS IN STAINLESS STEEL TEXTILE DYEING EQUIPMENT

pany for 21 years during which time he has served in several branch offices throughout the country and at the company headquarters at Philadelphia. J. A. Robinson has been named industrial manager of the Chicago branch of Brown Instrument Co., succeeding O. B. Wilson.

Westvaco Chlorine Products, Inc., New York, has appointed J. C. Thom as manager of sales. Since August, 1943, Mr. Thom has been Westvaco's acting manager of sales succeeding the late J. Rivers Adams.

E. I. du Pont de Nemours & Co., Wilmington, Del., Pigments Department, has appointed Roy E. Troutman as manager of a new southern distrist office in Houston, Texas. The states of Texas, Louisiana, Mississippi and Alabama will be served by the new office. Four appointments on the sales staff of the Pigments Department have been announced: G. A. McCorkle becomes assistant to F. H. Weismuller, director of sales; W. R. Morpeth, sales manager of white pigments; J. W. Cronin, sales manager, dry colors; J. A. Frederickson, manager of the central sales district, with offices in Cleveland.

The B. F. Goodrich Co., Cleveland, Ohio, has named Robert P. Kenney, who has been chief of the vinyl resins unit of the Chemicals Bureau, WPB, to be manager of international service of its Chemical Division. He was chief factory chemist at the Savannah, Ga., plant of the Union Bag & Paper Corp., when he was called to Washington. Goodrich has named J. E. Thomas as manager of cement sales in its Industrial Products Sales Division. He will direct the sale of all adhesive materials handled by the division. Goodrich has added John C. "Josh" Billings to its truck and bus tire department to handle sales of industrial and solid tires.

Apex Chemical Co., Elizabeth, N. J., has appointed Charles L. Coble, a chemist at Apex for the last 25 years, to be production manager of the company.

The Yale & Towne Mfg. Co., New York, has taken steps to expand its export business further by establishing specialized export departments in its manufacturing divisions. Henry

EDWARD E. HELM, since 1928 district sales manager in Philadelphia for The Reliance Electric & Engineering Co., Cleveland, who has been appointed general sales manager of the company. Kenneth S. Lord will succeed Mr. Helm as manager of the Philadelphia district.

D. Rolph, director of export sales, has already established export sales departments in the Stamford and Philadelphia Divisions, two of the company's seven operating plants. Similar plans, he said, are now being developed to increase the export sales of the Automatic Transportation Division, in Chicago.

Pennsylvania Salt Mfg. Co. of Philadelphia, Pa., has purchased Cotton Poisons, Inc., Bryan, Texas, manufacturers of calcium arsenate, used as an insecticide in the control of cotton pests.

Geigy Co., Inc., New York dyestuff house, has received word from Switzerland that Basle University has conferred the honorary degree of Doctor of Medicine upon Paul Laeuger, technical director of J. R. Geigy, the Swiss parent organization, which brought out the insecticidal properties of DDT. The award to Laeuger was made for his work in Gesarol, Neocid, and other DDT compositions.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has appointed P. C. Smith as assistant to manager of its transportation and generator division. J. S. Askey, G. L. Moses, and P. G. Lessman have been named as section engineers in the department.

Union Special Machine Co.—Walter E. LeRoy has recently been transferred from Cincinnati to Atlanta, Ga., where he will serve as manager of the local office of Union Special

Yes, they *really stay* beautiful and alluring, despite repeated washings and wearings . . . because they are finished with

Dura Beau
Reg. U. S. A. and Canada

FINISHES

SCHOLLER BROS., INC.

Mfrs. of Textile Soaps, Softeners, Oils, Finishes
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Earn a Manufacturing Profit By Using the Best Machinery and Supplies

DUSTERS
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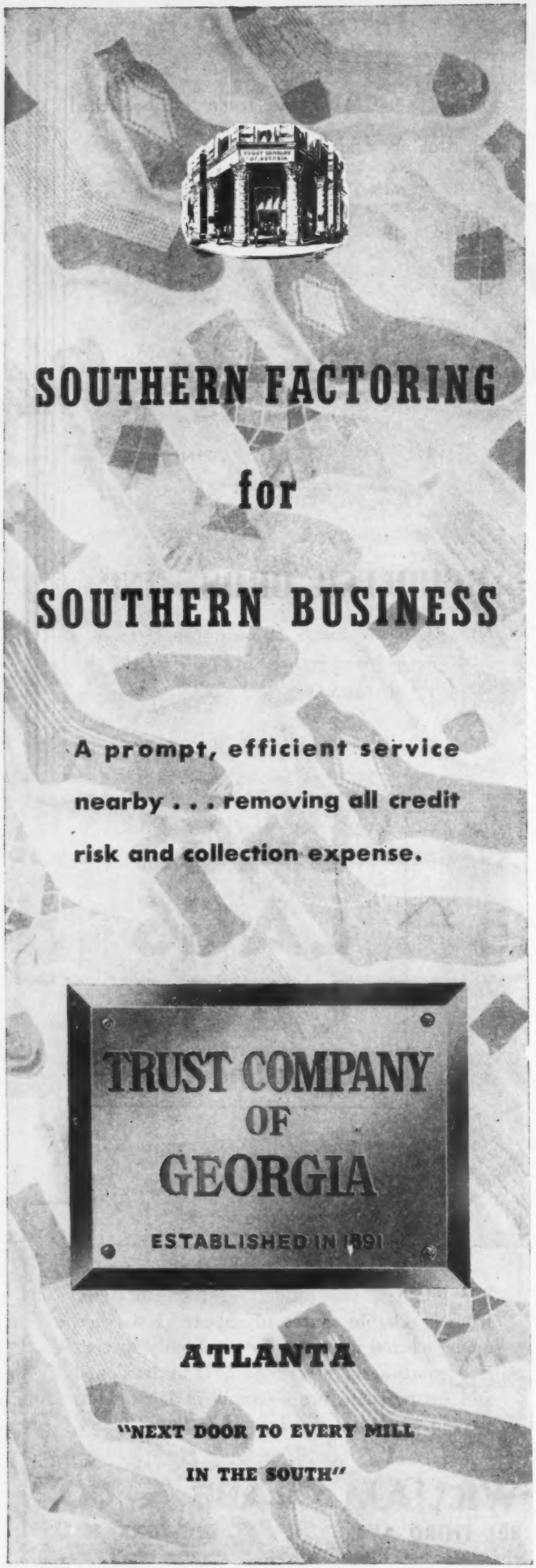
THE ACCEPTED STANDARD

LAGS LAGS LAGS
of Lasting Quality

We purchase steel under rigid specifications from a reliable source of supply. It is then manufactured into pins by our highly specialized machinery, after which it is hardened and tempered before assembly in lags. Thus we can guarantee you lags of *lasting Quality.*

WILLIAM CRABB & CO.
301 THIRD AVE., NEWARK, N. J.


SOUTHERN FACTORING
for
SOUTHERN BUSINESS
A prompt, efficient service nearby . . . removing all credit risk and collection expense.
TRUST COMPANY OF GEORGIA
ESTABLISHED IN 1891
ATLANTA
"NEXT DOOR TO EVERY MILL IN THE SOUTH"

Machine Co., succeeding P. T. McLendon recently resigned. Mr. LeRoy was elected a member of the Atlanta Textile Club at its latest meeting, and is well known in this territory.

Wickwire Spencer Steel Co., Buffalo, N. Y., has appointed R. L. Hoenstein as superintendent of the Mt. Wolf, Pa., plant of the company. He has recently been chief chemist at Mt. Wolf. Wickwire Spencer has moved its accounts receivable, accounts payable and credit departments to the River Road plant, Buffalo, N. Y., from Worcester, Mass. These departments handle all credit and billing for Wickwire Spencer Steel Co and its subsidiaries, American Wire Fabrics Corp., Wickwire Spencer Aviation Corp., and Wickwire Spencer Metallurgical Corp.

Fisher Governor Co., Marshalltown, Iowa, has appointed Malcolm W. Black & Co., New York, as exclusive representative in metropolitan New York and nearby territory.

Hercules Powder Co., Wilmington, Del., has purchased a UC45F twin-engine, low-wing, Beechcraft passenger-monoplane for the use of its executives traveling on war work.

Shook Bronze Corp., Lima, Ohio, has elected Alan Dale as vice president in charge of the company's sales of finished bronze bushings and bearings, bronze bars, etc.

Joy & Cox, Denver, Colo., have added Frank Gawan to their staff as sales engineer. He was formerly connected with the Denver Fire Clay Co. Joy & Cox represent Cochrane Corp., Hays Corp., Combustion Engineering Co., Northern Equipment Co., Reliance Gauge Column Co., Dampney Co. of America, Thomas C. Wilson, Inc., Fisher Governor Co., Eagle-Picher Sales Co., Tube-Turns, Inc., American Car & Foundry Co., Daniel Orifice Fitting Co., Cuno Engineering Co., Byron Jackson Co., Peabody Engineering Corp., and Manning, Maxwell & Moore, Inc.

J. A. Zurn Mfg. Co., Erie, Pa., has appointed Robert H. Shenk as administrative engineer in charge of research and development on the Zurn line of fluid handling equipment. Bernard (Rod) Alexander is now sales representative in the midwestern territory with headquarters in Chicago where he will be associated with Fred J. Barr, sales manager of that district. Harold (Hal) Bergman, formerly with the Chicago office, is now in the promotional and advertising department at the main office.

***THE JAMES H. McGRAW MEDAL FOR COOPERATION** was awarded posthumously to Carl M. Snyder for his work in advancing better housing and the collective action of all branches of business and industry which he brought about for that purpose. The award was presented to his widow, Mrs. Snyder, by S. B. Williams, secretary of the Committee of Awards and editor of "Electrical World", at a dinner attended by representatives of the building and electrical industries. Founder of General Electric's Home Bureau, Mr. Snyder was general manager of appliance sales for the company at the time of his death, Aug. 14, 1943.*

The Material Handling Institute, Chicago, has elected Lawrence J. Kline of The Mercury Mfg. Co., Chicago, to serve as the first president of the organization. J. Faulkner Thomas, of Thomas Truck & Caster Co., Keokuk, Iowa, was elected vice president of the Institute. Walter S. McCann will serve as acting secretary-treasurer. Directors elected were: S. K. Towson of Elwell-Parker Electric Co., Cleveland, Ohio; Lester M. Sears of The Towmotor Corp., Cleveland, Ohio; Walter C. Steubing of Lift Trucks, Inc., Cincinnati, Ohio; M. W. Heinritz of the Philco Corp., Storage Battery Division, Trenton, N. J.; H. A. Carter of Geneva Metal Wheel Co., Geneva, Ohio; and L. C. Backart of The Rapid Standard Co., Grand Rapids, Mich. The institute represents the wheeled industrial-transportation equipment industry, which during 1943 had sales in excess of $300,000,000.

Federal Telephone & Radio Corp., Newark, N. J., has appointed Frank O. Zimmerman, Oak Park, Ill., as assistant manager of its Chicago sales branch.

Carrier Corp., Syracuse, N. Y., reports that Allen K. Snyder has rejoined the company as staff assistant to Les M. Beals, director of advertising and sales promotion.

Less Card Adjustment Stronger, More Even Sliver

That's why 7 out of 10 mills are regular users of NON-FLUID OIL on cards. It affords dependable lubrication that prevents wear and helps maintain the close and accurate adjustment of Doffer and Top Flats. Outlasting liquid oil 3 to 5 times, NON-FLUID OIL definitely reduces lubricant and application costs—and keeps off goods in process, saving many times its own cost.

Write for instructive bulletin

New York & New Jersey Lubricant Co.

Main Office: 292 Madison Ave., New York 17, N. Y.

Southern Agent, Falls L. Thomason, Charlotte, N. C.

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St. Louis, Mo. — Greenville, S. C.

TRADE MARK REGISTERED
NON-FLUID OIL
U.S. PAT. OFFICE FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

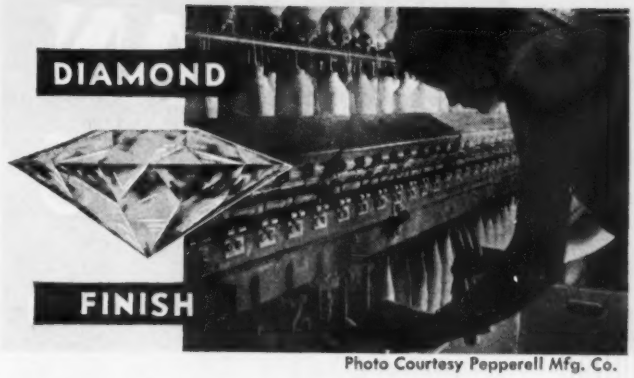
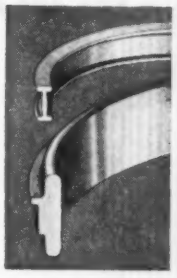


Photo Courtesy Pepperell Mfg. Co.

How to add Production without adding Machinery —

With reconversion and new machinery still in the uncertain future, it's a good idea to get all you can out of RINGS. Replacing worn standard rings with DIAMOND FINISH gives definite production gains. Utilizing our Eadie lubricated styles when possible means still greater increases. The production advantages of high-polish DIAMOND FINISH rings — not only for now, but for future competitive conditions also — are well worth looking into!



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SPINNING DIAMOND FINISH **RING CO.**

Makers of Spinning and Twister Rings since 1873

THOS. WOLSTENHOLME SONS & CO. INC.

3300 Frankford Avenue
Philadelphia, Pa.

Yarns for All Purposes

French and English Spun Worsted
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Representatives:—

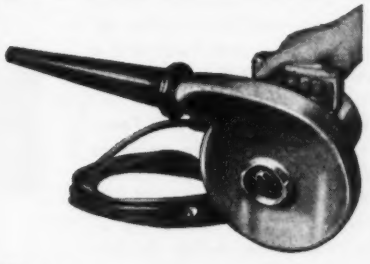
Mr. Robert H. Perkins, 99 Chauncey St., Boston 11, Mass.
Mr. C. F. Peffer, The Merchandise Mart, Suite 1076, Chicago 54, Ill.
Mr. Arthur Bone, 4436 Worth St., Los Angeles 33, California

DANA WARP MILLS

Westbrook, Maine

Cotton yarns, single and ply
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps
Seamless grain bags.

Protect Valuable Motors and Machinery *Clean them with—*



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PREVENT motor burnouts, overheating and shutdowns. Keep motors and machinery clean. Blow out dust, dirt, lint, chips, etc. with the powerful, portable TORNADO Electric Blower. Quickly pays for itself in cutting repair and replacement costs. Write for details and FREE Trial Offer

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THE OLDEST AND LARGEST
MANUFACTURER OF
Ring Spinning and Twister Travelers
In the UNITED STATES

American • Hicks • Wilson
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MAKE STRONGER YARN

National-Etartnap Finish
A New Chemical Treatment
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WHITMAN YARNS

WORSTED · COTTON · SPUN RAYON

WHITMAN SERVICE
1852-1944

During 92 years The William Whitman Company, Inc., and its predecessors have served the interests of important mills and users of yarns, seeking to establish for its customers a steady flow of dependable, quality yarns.

ARLINGTON MILLS
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Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

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French-spun Worsted and Merino Yarns. Specialty Yarns—Rabbits Hair, Rayon, Acetate and Other Blend Yarns.

NONQUITT MILLS
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Cotton and Spun Rayon Yarns, Merino Blends, Specialty Rayon and Wool Mixtures.

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PHILADELPHIA, 1600 Arch St. — CHARLOTTE, Commercial Bank Bldg.

NEWS ABOUT Men

Wm. Henry Belk, of Charlotte, N. C., has been elected president of Quaker Meadows Mills, Inc., Hildebran, N. C. He succeeds **Bascom Blackwelder**, who was elected vice-president, treasurer and manager. **Horace C. Lutz** was elected a vice president, and **M. E. Newton** continues as secretary.

Lt. Col. W. G. E. Aird, at a recent meeting of the board of directors, was appointed vice president and managing director of The Montreal Cottons, Ltd., Valleyfield, Quebec.

Walter E. Morton, formerly treasurer of Dunson Mills, LaGrange, Ga., has been elected president and treasurer. **C. D. Crone** has been promoted from weaving overseer to superintendent and is succeeded by **T. J. Dairs**, as head of weaving. **Lawrence Wadsworth**, formerly assistant overseer of weaving, is now overseer of the cloth room, and **E. C. Pressley**, formerly of Callaway Mills, is overseer of spinning.

C. W. Bieber, in charge of purchasing of the Laros organizations since 1928, has been elected a vice-president of the R. K. Laros Silk Co., Bethlehem, Pa. **P. G. Mueller** in charge of Laros New York offices has been named a vice-president of the Laros Textiles Co. **R. W. Strohmeier** has also been named vice-president of the latter company to serve as coordinator of production and sales. **J. L. McAlarney** has been named field sales manager.

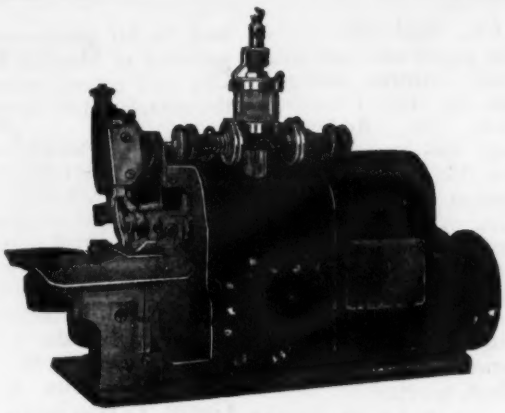
Lewis D. Smart, manager of Royal Cotton Mill Co., Wake Forest, N. C., has been elected president and treasurer to succeed **Don P. Johnston**, who has resigned to form the sales agency of Johnston & Co.

Joseph L. Eastwick is president of the new Lees-Coch-

C. W. Bendigo Appointed Executive Editor of TEXTILE WORLD

The appointment of C. W. Bendigo to the position of executive editor of TEXTILE WORLD, effective with this issue, is announced by Edwin D. Fowle, publisher and editor-in-chief. The promotion follows one year's full-time service as assistant editor and approximately ten years' association as a contributor and a member of TEXTILE WORLD'S consulting staff.

Mr. Bendigo was born in Tower City, Pa., and, before going to college, worked briefly in several Pennsylvania silk mills. Shortly after leaving the University of North Carolina, where he majored in journalism, he resumed his textile activities with Adams-Millis Corp., in High Point, N. C. Later he joined Glen Raven Silk Mills, Glen Raven, N. C.; Burlington Mills Corp., Mooresville and High Point, N. C.; and Judson Mills, Greenville, S. C. He is a member of the Textile Research Institute and of the American Association of Textile Chemists & Colorists.



Merrow Class A Machines, illustrated, have made possible quality production, high speed and low operating costs to a degree greater than ever before. They are easy to handle, simple to adjust, sturdy in design, accurate in workmanship and readily adapted to many kinds of work. Let us or our distributor nearest you demonstrate the work of these machines on samples of your own fabric.

MERROW HIGH SPEED

OVEREDGING, OVERSEAMING AND HEMMING MACHINES

Produces Federal Specification Stitch
Types 501, 502, 503, 504 and 505

WAR WORK DEMANDS

Quality Results—High Production
Convenient Handling
Minimum Time-Out for Adjustment
or Repair—Low Upkeep Costs

Obtain Maximum Quality Production by Using a Machine Suitably Arranged for Your Work — Our Distributors or Our Direct Representatives Are on Call to Advise You Suitable Machine Arrangements for Various War Work and Proper Care and Operation of Machine.

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STARTING ITS SECOND CENTURY

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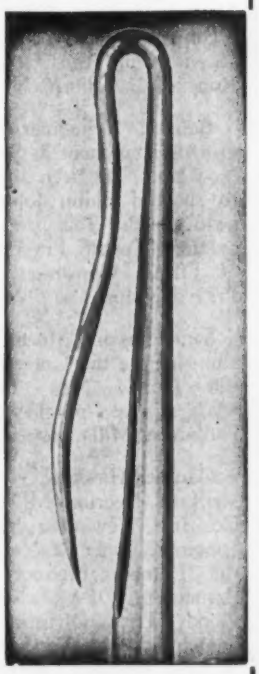
Manufacturers of
Quality LATCH and SPRING-BEARD

NEEDLES



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KNITTING MACHINES

meet the need for Speed—
for Quality and Low Cost

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is versatility . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

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1870 **CRANE** 1944

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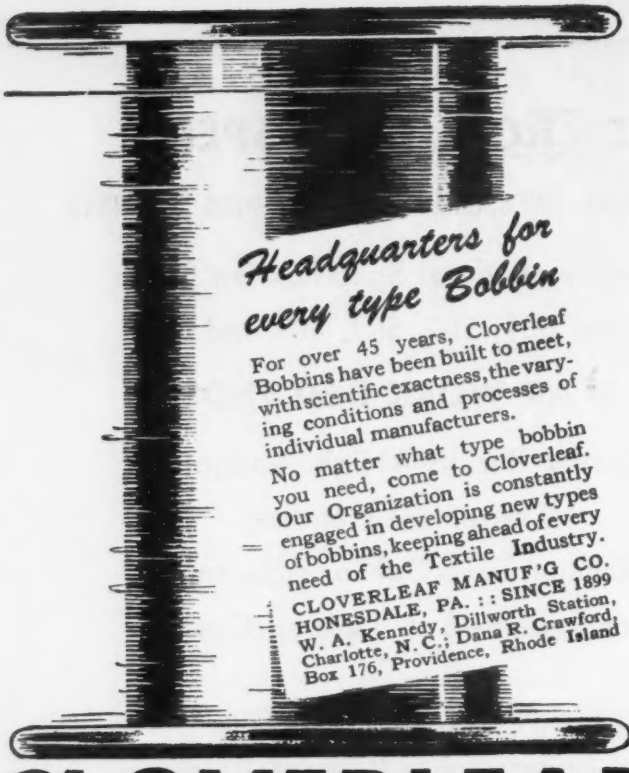
LAKEPORT, N. H.

Spring Latch Needle
KNITTING MACHINERY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For over 45 years, Cloverleaf Bobbins have been built to meet, with scientific exactness, the varying conditions and processes of individual manufacturers.
No matter what type bobbin you need, come to Cloverleaf. Our Organization is constantly engaged in developing new types of bobbins, keeping ahead of every need of the Textile Industry.
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W. A. Kennedy, Dillworth Station, Charlotte, N. C.; Dana R. Crawford, Box 176, Providence, Rhode Island

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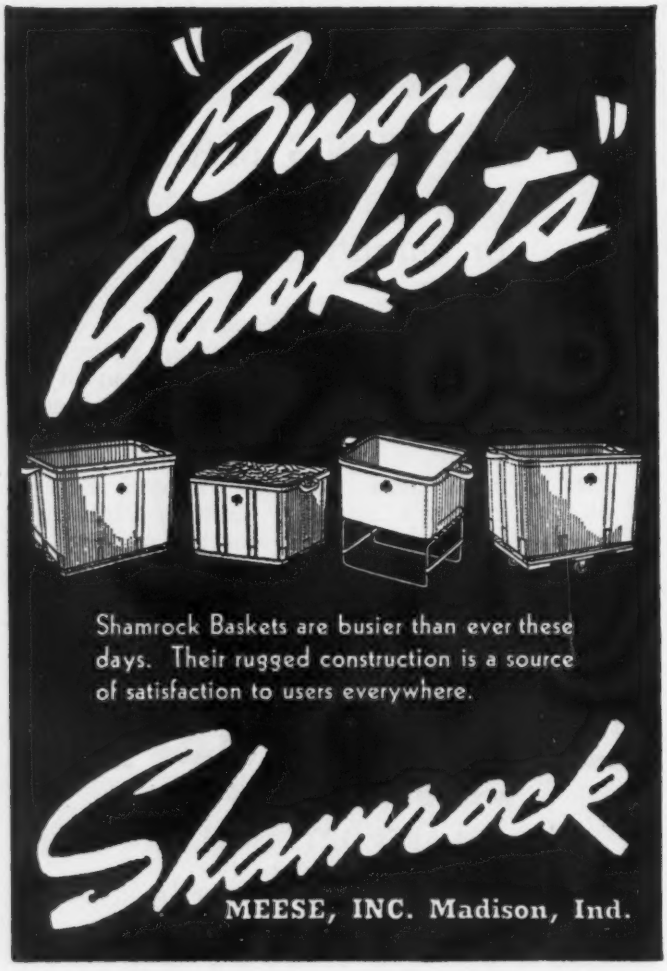
Bobbins . . . . . .

New type cone drive spindle and bobbin available at end of war.


"Busy Baskets"
Shamrock Baskets are busier than ever these days. Their rugged construction is a source of satisfaction to users everywhere.
Shamrock
MEESE, INC. Madison, Ind.

rance Co., which will coordinate the carpet sales and manufacturing activities formerly handled by the Chas. P. Cochrane Co., Bridgeport, Pa., and the Blueridge Co., Glasgow, Va. **Peter B. Hagan,** president of Charles P. Cochrane Co., will be chairman of the board of directors. The other officers of the new concern will be: **James W. Dunaway,** vice president; **Clifford R. Wright,** vice president; **A. T. Eastwick,** treasurer; **Russell C. Gebert,** secretary.

O. Max Gardner, Washington, for many years associated with the cotton-textile operations and rayon weaving, has been appointed by President Roosevelt to be chairman of the advisory board to the Director of War Mobilization and Reconversion.

Kenneth W. Marriner, of Boston, Mass., has been appointed director of the Textiles, Clothing, and Leather Bureau, WPB, to succeed **J. Spencer Love,** who is returning to Burlington Mills Corp., of which he is president. Mr. Marriner went to WPB in July, 1941, from Winslow Bros. & Smith, wool merchants, Boston, Mass.

E. R. Metcalf, of Auburn, N. Y., has been named director of the Wool, Cordage, and Textile Machinery Division of the Textile, Clothing, and Leather Bureau, WPB, succeeding **Kenneth W. Marriner.** He is from the Columbian Rope Co., Auburn, N. Y.

Bernard Heineman, of the firm of Heineman & Seidman, New York, has been appointed to succeed **Philip Johnson** as head of the Finished Goods Section, Textile Price Branch of OPA's Consumer Goods Price Division.

Sam Elias and **Morris Russo,** who operate the Colonial Textile Corp., New Bedford, Mass., have purchased the Fairhaven Mills property.

Gardner Hawkins, vice president of Deering Milliken & Co., Inc., New York, has been appointed price executive of the Primary Products Price Branch of OPA's Consumer Goods Price Division. That branch handles the pricing of cottons, woolens, rayons, finished goods and various types of fibers. He is replacing **Luther H. Hodges,** who resigned his OPA position to return to his position of vice president of Marshall Field & Co., and general manager of the manufacturing division.

C. Walter Seidel has been elected president of the Chicago Yarn Men's Club. **Arthur H. Emerson** is vice-president; **Fred W. Frank,** secretary; **Chas. F. Peffer,** treasurer. Other members of the Chicago Yarn Men's Club include **Wm. D. Benson, Ovidas J. Caron, Oscar Heineman, M. Arnold Henderson, James A. Holt, George T. Hutchinson, Frank W. Kingsley, Carl M. Patterson, Wm. R. Reitheimer,** and **Wm. J. Yates.** The Chicago Yarn Men's Club was one of the first organizations of its kind in the United States, having been organized 24 years ago with substantially its present membership. No new members have been taken in for the last ten years until the recent meeting when the following were elected to membership: **W. C. Napier, D. F. Swain,** and **E. W. Wood.**

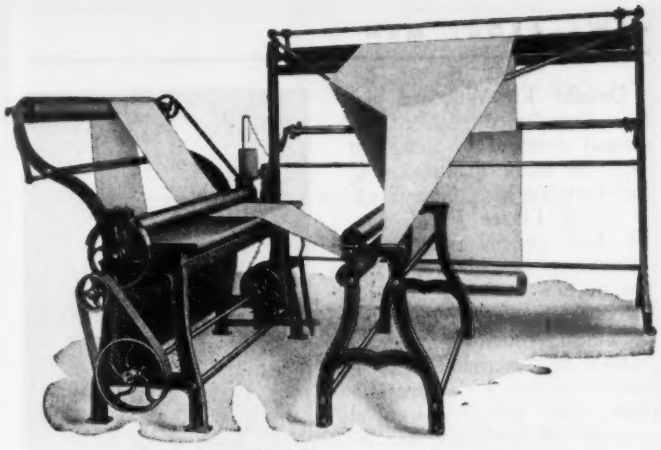
Sir Samuel Salvage, Dr. Harold deWitt Smith, Ernest Geir, and **M. Earle Heard** were awarded honorary membership plaques by the American Association of Textile Chemists & Colorists.

Frank F. Myers, Chattanooga representative of Geigy Co., Inc., has been elected chairman of the South Central Section of the American Association of Textile Chemists & Colorists.

John N. Baccash has been appointed chief technician and production manager of the two plants of H. Warshow & Sons, Inc., Avoca and Montoursville, Pa. He was previously with Frank Ix & Sons.

Fred Tolson has resigned from Textron, Inc., Lowell, Mass., to become superintendent of throwing at Morgantown Full-Fashioned Hosiery Co., Morgantown, N. C. He was at one time superintendent of Morton Feldman, Inc., Mt. Holly, N. J.

William F. C. Ewing, first vice-president and treasurer of Alexander Smith & Sons Carpet Co., has been elected chairman of the board of Sloane-Blabon Corp., hard surface floor coverings, succeeding **Boror Dahlberg,** resigned. **Robert F. Ridges,** secretary of Alexander Smith, succeeds **Horace J Dowd,** resigned, on the Sloane-Blabon board.



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Sewing any length stitch up to 1¼ in., making a firm, strong stitch for any weight or width of goods. This machine is equipped with our latest oscillating needle bar sewing head, which makes it the fastest tacking machine on the market for tacking the selvages of woolen and worsted fabrics. For further information, send for our catalog.

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BATHING SUITS
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Complete color assortments

American Woolen Company

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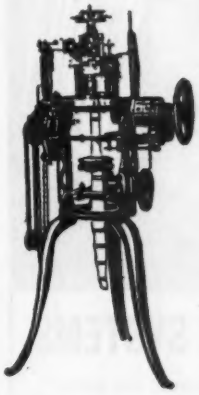

Do your planning now. After the peace—is too late: Your competition is ready to fight you for your markets. Don't let them get the jump on you—because your plans aren't definite, and well advised.

BRINTON'S technical department is ready. Take advantage of its new ideas — improvements — methods — and economies. Consult BRINTON regarding your plans. Get expert counsel NOW — on your Knitting Machinery needs.

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● This well-known firm is enthusiastic over results obtained in maintaining high temperature for curing. It has also installed our generators in other departments. You, too, can profit by using Carbomatic infra-red units for curing ovens, loop-dryers, tenters and singers. Expert engineers study your problems—no obligation on your part. Installations guaranteed.

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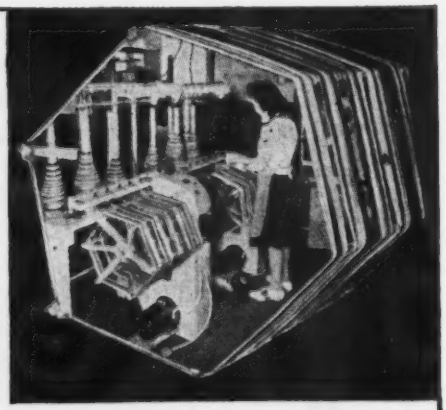
Also: H. W. Butterworth & Sons Co., Philadelphia, Pa.
In Canada: Canadian Textile Engrg. Ltd., 980 St. Antoine St., Montreal, P. Q.

While one machine winds skeins, operator doffs other unit.



20% to 30% more skeins an hour..

up to 50% less floor area..

with

FIDELITY

TWIN-UNIT SKEIN REELING SYSTEMS

Twin-unit System keeps your operators "on top of the work" with less fatigue. Collapsible arms on reels. Doffing a simple one-arm operation. Automatic yardage control. 50- to 60-second doffing cycle. Compact construction saves space, steps.

Two types. Double-End to wind 12 skeins, designed for rayon, nylon and the finer counts of yarn. Equipped with adjustable reels for skeins 33" to 60". Variable speed drive, 150-400 R.P.M.

Single-End, 6 skeins, for worsted and coarser counts of yarn. Operating speed, 103 R.P.M. Can be equipped with larger reel for skeins, 45" to 75" circumference. Single-End types may be equipped with variable speed. Write for bulletin.

FIDELITY MACHINE COMPANY

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

NEWS ABOUT MEN

Donald K. Woodard has been elected vice president and general manager in charge of yarn and fabric manufacturing for Textron, Inc., New York, N. Y. **J. Linzee Weld,** who has been general manager of operations at Suncook, will assume new duties as treasurer in connection with purchasing, accounting, financing, renegotiation and contract terminations after Jan. 1. **Walter Hildick,** who has been general manager of Textron's yarn division at Lowell, will assume charge of the company's organizational plans, methods and personnel.

Horace A. Carter, vice president and treasurer of William Carter Co., Needham, Mass., has been elected executive vice president. He will continue as treasurer. **Lyndall F. Carter** has been made vice president, continuing to serve as secretary and assistant treasurer, and **William L. Carter** has been named assistant vice president, continuing to be assistant secretary and advertising manager.

Malcolm E. Campbell, dean of the North Carolina State College Textile School, Raleigh, N. C., has been appointed by Clarence Dorman, chairman of Southern Experiment Station Directors, as chairman of a committee on "Cotton Quality and Utilization."

H. Norman Ford has been named acting principal of the Straubenmuller Textile High School, New York, following the death of Dr. William H. Dooley, principal for many years.

Oliver M. Reitan, who recently resigned as vice president and manager of Nebel Knitting Co., Charlotte, N. C., after 15 years association with the firm, on Dec. 16, opened a yarn brokerage business for the knitting and weaving trades, at 302 Wilder Bldg., Charlotte.

Adrian L. Shuford, glove manufacturer of Conover, N. C., was elected president for the fifth time of the Work Glove Institute of America at its annual meeting in Chicago last week.

J. Louie Lynch, of Joshua L. Baily & Co., has been elected president of the Atlanta Textile Club for 1945. Other officers include: vice-president, **Thos. L. Osborne,** Sterling Textile Co.; secretary, **C. A. Peterman,** Iselin-Jefferson Co.; and treasurer, **Keith A. Quarterman,** Hesslein & Co., Inc., **Walter LeRoy,** of Union Special Machine Co., was elected to membership.

MACK KAHN, president of Amoskeag-Lawrence Mills, Inc., and Kanmak Mills, Inc., who has acquired control of the Lymansville Co., Lymansville, R. I., makers of worsted and tropical suitings, operating 4,400 worsted spindles, 2,600 twister spindles, and 116 automatic looms. Kanmak Textiles, Inc., New York, will act as exclusive selling agent for the output of the Lymansville Co. Mr. Kahn is also president of Artistic Foundations, Inc., and of Flexees, Inc. He is treasurer of Manchester Knitted Fashions.

H. E. Kiefer, Jr., buyer for Ware Shoals Mfg. Co., Ware Shoals, S. C., is the new secretary-treasurer.

L. F. Warren has been appointed sales representative for Textiles, Inc., Gastonia, N. C., in New England.

John J. Bosshard has joined the Fabric Development De-

HARRY A. TILTON, of Fallon & Tilton, Boston, Mass., who was elected president of Boston Wool Trade Association at recent annual meeting. He has been in the wool field since 1902.

Acme Products

for seamless hosiery knitting

Speak for themselves

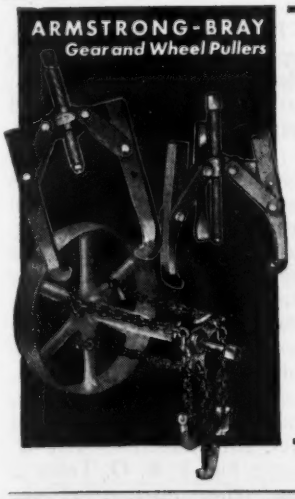
Up-To-Date Machines

Needles

Economy Makers

ACME KNITTING MACHINE & NEEDLE CO.

FRANKLIN, N. H.



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STEELGRIP Standard Rigid Arm Gear and Wheel Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special models. 12 types and sizes. CHAINGRIP Universal Pullers pull wheels, solid gears, pinions, etc., even at considerable distance from end of shaft. Proof-tested chains have both chain hooks and special pulley hooks. 3-ton and 12-ton capacities.

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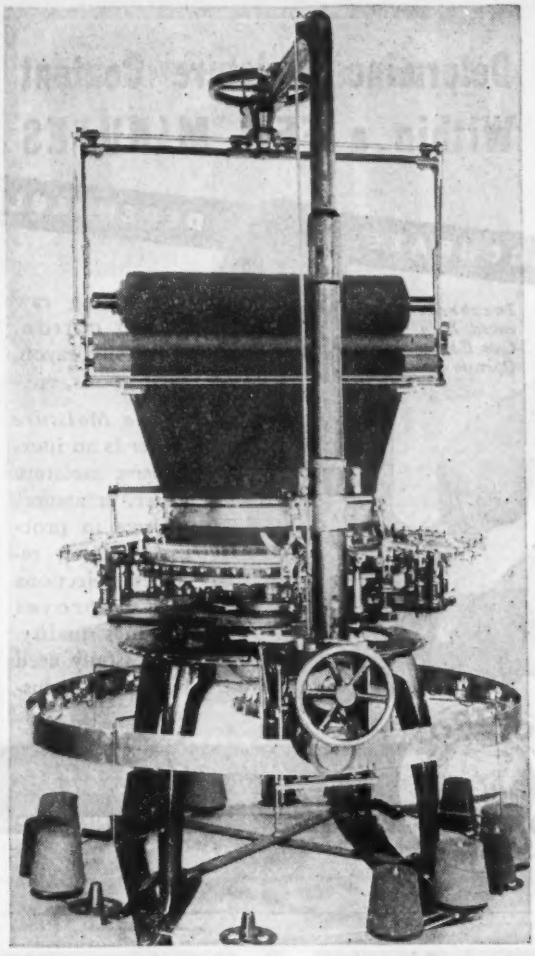
SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY



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KNITTING MACHINE

1. **50% reduction in cost of production on most coarse or fine fabrics.**
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3. **Produces a superior quality of knitted fabric, getting the most out of every grade and size of yarn.**
4. **Basis of all statements is on actual mill performance and production on S-1 models now installed.**

All reasons that will save you money! The new S-1 single head spring needle machine is especially designed for overcoating materials. At the same time, any fabric can be knit on it that is knit on the older type spring needle table. Production is approximately 100 yards per 8 hour day, using 6 feeds.

For further details write us direct.

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ONEIDA ST. SYRACUSE, N. Y.

Determine Moisture Content Within a FEW MINUTES

ACCURATE DEPENDABLE

Inexperienced Help Can Easily Operate

For testing raw stock, cotton, wool, silk, rayon, yard goods, etc.

The *Moisture Teller* is an inexpensive moisture tester. It assures savings in processing time, reduces rejections and improves product quality. Successfully used by many industries.

CONTROL SAVES TIME EQUIPMENT

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THE TERRELL CLEANING AND HANDLING SYSTEM

The improved TYPE K stripper; Automatic Bobbin Box Hoist and Conveyor Elevator—a modern, compact system for increasing the efficiency and lowering the cost of bobbin cleaning and handling.

The **Terrell Machine Co.** *Inc.*

CHARLOTTE, N. C.

James F. Notman.....Needham, Mass.—N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J.—Penn., N. J. and N. Y.
W. J. Westaway Co., Ltd.....Hamilton and Montreal, Canada
Geo. Thomas & Co.....Manchester, England.—European Agt.

partment of American Viscose Corp., New York, N. Y. Mr. Bosshard perviously was a technician with William Whitman Co., Inc.

E. M. Lander has retired as secretary and assistant treasurer of Calhoun Mills, Calhoun Falls, S.C., but will continue as a director. Mr. Lander has held these offices for the past 35 years. He will be succeeded by **S. Frank Jones**, of Anderson, S. C.

J. J. Norton, formerly associated with Monarch Mills, Union, S. C., has become assistant treasurer and manager of Gaffney Mfg. Co., Gaffney, S. C. He will also act as superintendent for the present. **T. D. Drew**, former superintendent, has accepted the position of superintendent of Startex Mfg. Co., Tucapau, S. C. **Walter Danhoff**, for five years superintendent of carding and spinning, has been promoted to assistant superintendent, succeeding **J. H. Robbins**, who has resigned to accept a position with the Riverside & Dan River Cotton Mills, Danville, Va. **John Thompson**, of Burlington, N. C., formerly of Anderson, S. C., has become office manager. Mr. Norton succeeds **Robert B. Carson**, resigned.

George Blumenthal of Lion Brand Yarn Co., New York, has been appointed sales manager of the organization.

A. O. True, connected with the engineering department of Proximity Mfg. Co. Greensboro, N. C., for 22½ years, was made a life member of the American Society of Civil Engineers at the winter meeting of the North Carolina section of the society at Winston-Salem, N. C., Dec. 11.

Miss Mary E. Peffer has been elected assistant secretary and assistant treasurer of Laros Textiles Co. and R. K. Laros Silk Co., both of Bethlehem, Pa. Miss Peffer joined the accounting staff of the Laros company in 1924.

H. J. Hodnett, who has been chief paymaster for West Point Mfg. Co., West Point, Ga., has been appointed sales agent of West Point Utilization Co., succeeding **Ralph Kirkpatrick**, who has resigned.

David Lindsay, general manager of Johnston Mfg. Co., Charlotte, N. C., is the newly elected vice president of the Carolinas-Virginia Purchasing Association.

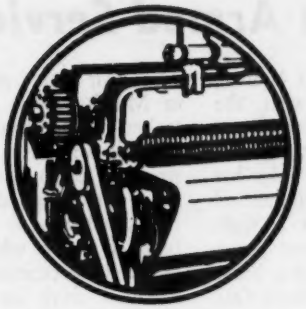
LEROY H. SMITH, manager of the American Viscose Corp's. rayon plant at Roanoke, Va., inspects the first roll of rayon tire fabric woven at the plant. The fabric is made from the company's "Rayflex" extra-strength yarn produced at its Front Royal, Va., plant.

H. R. Mathewson, formerly superintendent of Union Bleachery, Greenville, S. C., has been promoted to general manager; **C. Percy Gregory, Jr.**, who has been with the company for 10 years, has been made assistant general manager; **Edward S. Tillinghast**, who has been assistant superintendent, has been made superintendent; **L. W. England**, head dyer, has been promoted to assistant superintendent, and **George W. Speer, Jr.**, assistant dyer has become dyer, and **R. W. Price**, assistant dyer. All promotions were effective Jan. 1. **R. O. Tuten** is now office manager of the Union Bleachery, Geenville, S. C.

J. M. Brounds has retired as superintendent of winding at the Southern Worsted Mills, Greenville, S. C. Mr. Brounds has held that position for the last 20 years.

Charles Boyd, of Gaffney, S. C. has been named superintendent of Eastern Mfg. Co., Selma, N. C., succeeding **T. B. Reynolds**, who resiged to accept a similar position at Tipton, Ga. Mr. Boyd formerly was superintendent in cotton mills at Spray, N. C., and Lumberton, N. C.

WEAVE FOR VICTORY



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MILL STARCH

"The Weaver's Friend"

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- Penetrates Thoroughly
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STANDARD SILICATES

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For better whites and level results, use a pound of STANDARD Grade 40 Silicate with each 3 to 5 lbs. of caustic in your kier boiling formula. Troublesome stains are eliminated and scarce chlorine is saved.

Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

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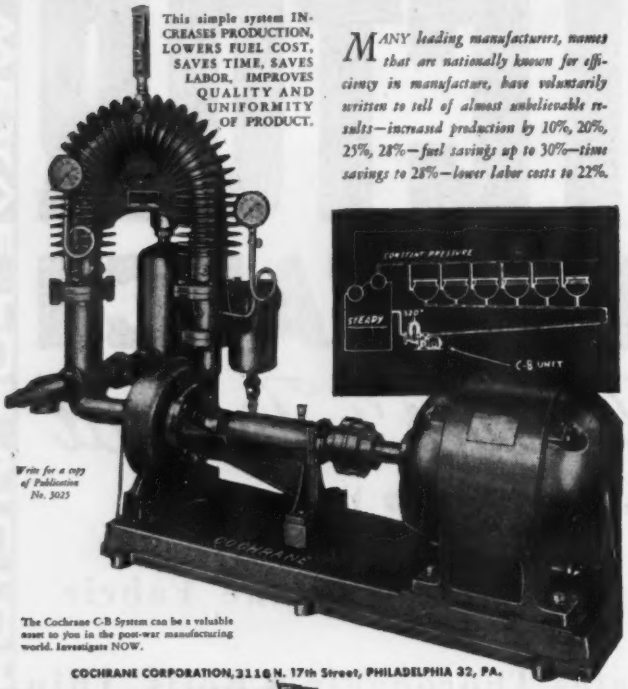
This simple system INCREASES PRODUCTION, LOWERS FUEL COST, SAVES TIME, SAVES LABOR, IMPROVES QUALITY AND UNIFORMITY OF PRODUCT.

MANY leading manufacturers, names that are nationally known for efficiency in manufacture, have voluntarily written to tell of almost unbelievable results—increased production by 10%, 20%, 25%, 28%—fuel savings up to 30%—time savings to 28%—lower labor costs to 22%.



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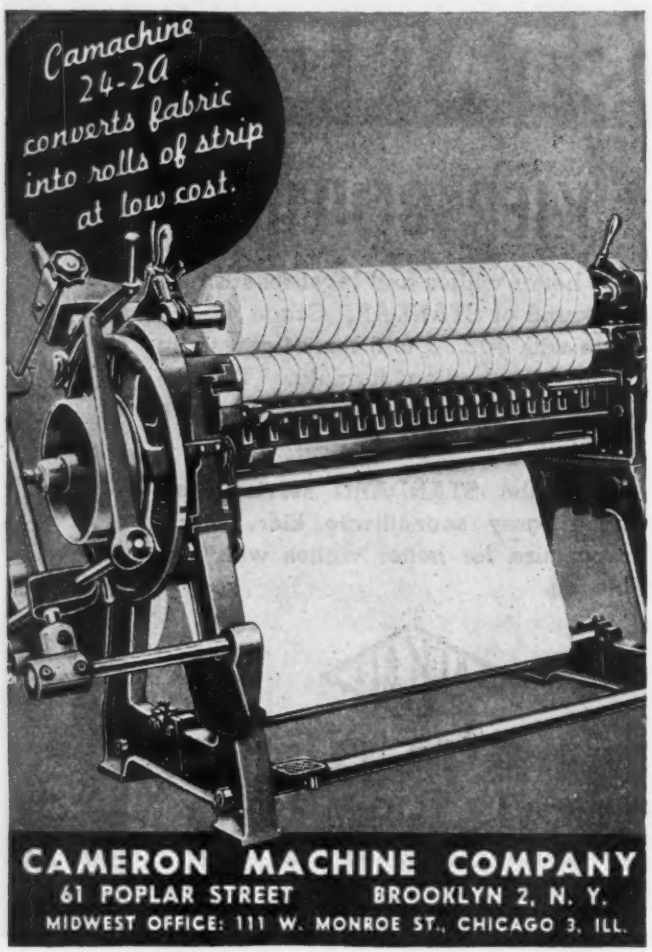
CONDENSATE RETURNED TO BOILERS AT HIGH PRESSURE AND HIGH TEMPERATURE



CAMERON MACHINE COMPANY
61 POPLAR STREET BROOKLYN 2, N. Y.
MIDWEST OFFICE: 111 W. MONROE ST., CHICAGO 3, ILL.

Men in Armed Services

Fred G. Hilliard, of Bonlee, N. C., associated with the Revolution Mill, Greensboro, N. C., before entering the Army in March, 1943, has been awarded the distinguished Flying Cross. He is a staff-sergeant and a gunner on a B-24 Liberator. He also wears the Air Medal with three Oak Leaf Clusters.

Campbell D. Garrett, AUS, Chief of the Clothing Branch of the Procurement Division, Office of The Quartermaster General, has been promoted to the rank of colonel, Colonel Garrett, former buyer for J. C. Penney Co., is responsible for and directs the purchase of all clothing items and special cold climate equipment for the Army, Women's Army Corps, Army Nurse Corps, the American Red Cross, War Aid and other arms, services, and agencies.

Richard F. Ray, formerly sales representative of Henry K. Barnes Co., Salem, Mass., has lately been inducted into the Army and is now in training at Camp Plauche, La.

Robert R. Stoaks, assistant to the officer-in-charge of the Buying & Production Branch, Procurement Division of Philadelphia Quartermaster Depot, has been promoted from second to first lieutenant.

Henry B. Thompson, Jr., has rejoined McCampbell & Co., New York, after being put on the inactive list of the U. S. Army. He lately ranked as major, having entered the Army Air Force as a Captain in March, 1942. He was attached to the headquarters of the 9th Air Force. After a few weeks at Cairo, Major Thompson was assigned to "The Earthquakers" — a medium bomber group which recently received a citation for their splendid work in Africa and Sicily. The Major served as Group Intelligence Officer for over a year and a half in Libya, Tunisia, Sicily, Italy and India. Before joining McCampbell & Co. in 1939, Major Thompson was with the U. S. Finishing Co. as vice president and director, having started with this company in 1920. He is also a veteran of the first World War.

Sam E. Owens, Jr., before entering the service, assistant superintendent of St. Pauls Rayon Mills, St. Pauls, N. C., has been discharged from the U. S. Navy and has become assistant to the superintendent of carding at Clinton Cotton Mills, Clinton, S. C.

John E. Glenn has become the Quartermaster Inspector at the No. 6 unit of Cannon Mills Co., Concord, N. C., succeeding **Joseph F. Wessells,** who has been transferred to another assignment.

Frederick Wilkerson, who was recently honorably discharged from the Marine Corps, has returned to his former position as assistant superintendent of Montgomery Cotton Mills, Montgomery, Ala.

CARL L. HARMON, Technician 5th Grade, with a Y-Force Portable Surgical Hospital supporting the Chinese armies in the Salween Campaign in Western Yunnan. He was working for the Celanese Corp. of America, Cumberland, Md., when he entered the Army in December 1942. These Y-Force American hospitals to one of which Harmon is assigned, are credited with saving the lives of more Chinese soldiers than had ever been saved before in all the campaigns of China's long history.

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SOFTER, BETTER KNITTING
COTTON YARNS—DYED OR BLEACHED—
with Laurel Emulsions

Laurel Emulsions—Hydrocop and 3B Softener—condition and soften cotton yarns, mercerized, dyed or bleached. Used by hundreds of mills for over 25 years to assure proper regain, speed up twist, produce even-running yarns and clearer stitch. Laurel Hydrocop and 3B Softener will not turn rancid or discolor yarn on standing. Easily applied over roller trough or cone winders, quilling frames, or twisters. If you want softer, better knitting yarns to help you meet specifications, send for a trial order of these veteran emulsions, Laurel Hydrocop and 3B Softener today.

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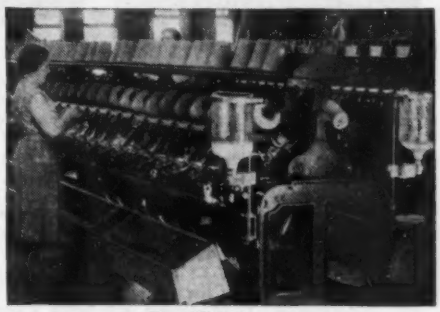

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Wm. H. Bertolet's Sons • *Established 1909*
Tioga, Thompson & Almond Sts., Philadelphia 34, Pa.
WAREHOUSES: PATERSON, N. J. • CHATTANOOGA, TENN. • CHARLOTTE, N. C.

PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS

NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA

SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John:
The Starches and Gums which Penick and Ford manufacture for polishing twine and cord have been developed for every phase of this operation.
Lets try their recommendation.
Jim

THE STANDARD DE-SIZING AGENT

RAPIDASE

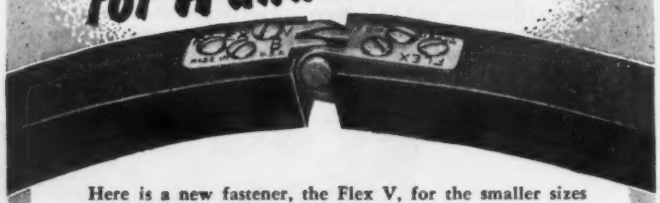
Dependable, speedy and economical de-sizing . . . Our technical staff always at your service.

● *for cottons rayons and mixed goods*

WALLERSTEIN CO., INC.
180 MADISON AVENUE, NEW YORK

and now the FLEX V TRADE-MARK

A new Fastener for A and B V-belts



Here is a new fastener, the Flex V, for the smaller sizes of V-belts that is going to establish the same outstanding performance record as the Alligator V-belt fastener has already established for the larger sizes of V-belts.

This new Flex V fastener is made in two sizes for A and B section V-belts. It is simple in design, easy to apply and the separable hinge joint makes for quick replacement of V-belts without dismantling shafting or machinery. No metal touches the pulley so Flex V fastened belts can be run on a V-flat drive.

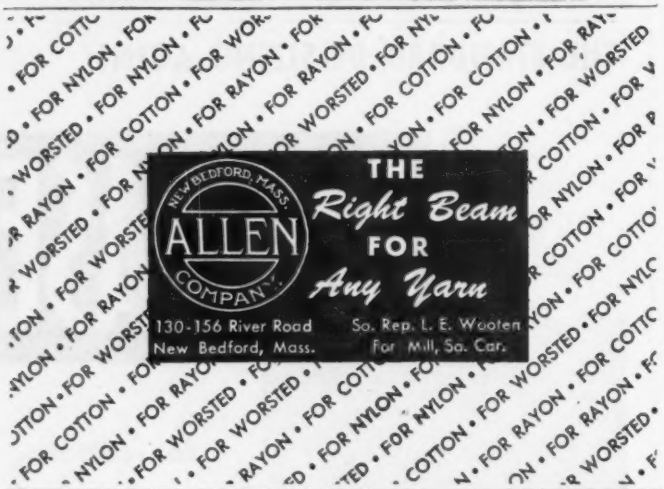
Folder No. V-12 gives complete details on this new Flex V fastener with list prices, special tools and application information. Your request will bring a copy.

Order from your supply house

FLEXIBLE STEEL LACING CO.

4630 LEXINGTON ST., CHICAGO 44, ILLINOIS

Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts. Alligator V-belt Fasteners for V-belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.



Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.

Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE

This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

Obituary

Philip A. Sampliner, 71, one of the founders of Industrial Rayon Corp. and Rich-Sampliner Knitting Mills, Cleveland, Ohio, died, recently.

George L. Brownell, 90, formerly president of G. L. Brownell, Inc., Worcester, Mass., inventor and maker of the Brownell twister, died in that city on Dec. 18.

L. M. Flesh, 81, chairman of the board of Atlas Underwear Co., Piqua, Ohio, died Dec. 2. He was active in that firm for 45 years, being one of the founders. He gave life to the early development of men's union suits by initiating trunk-measurement to replace chest-measurement for that garment.

Edward Dickinson Kingsley, 84, chairman of Niagara Alkali Co., Niagara Falls, N. Y., died at New York Jan. 1. In 1907, he organized the Electro Bleaching Gas Co. to manufacture liquid chlorine, a new product at the time in this country.

Frank R. Strong, sales manager of Rumford Printing Co., Concord, N. H., died Nov. 24.

James Edward Waterbury, 59, president of H. Waterbury & Sons, wool felt mill, Oriskany, N. Y., died Dec. 12. He was president of the Papermakers' Felt Association.

Col. Louis R. Cheney, 85, prominent in the Cheney silk manufacturing organization at Manchester, Conn., in his earlier days (1879 to 1893), and later a director of many industrial, banking and philanthropic enterprises in Connecticut, died at Hartford on Dec. 17.

William Estabrook Jones, 82, a member of the Boston wool house of Hallowell, Jones & Donald, and former president of the Boston Wool Trade Association, died at Boston on Dec. 9. Mr. Jones was a native of Boston and entered the wool business in 1880 with the firm of Hallowell & Coburn, Boston. He was a founder of the Boston Wool Trade Association, and its president in 1916-17. Mr. Jones gave the wool industry over 64 years of outstanding service, and was identified with a considerable number of philanthropic organizations and a director of several banks. On the afternoon of his funeral, business was suspended in the wool market at Boston.

Henry N. Corwith, 87, former president of American Knitting Mills, New York, died at Bridgehampton, L. I., Nov. 24. Mr. Corwith started his career as an errand boy, later becoming one of the founders of the American Knitting Mills. He retired from the presidency of that company 14 years ago.

William Henry Dooley, spokesman for textile education in the New York public school system and principal for over 25 years of the textile high school, lately called the Straubenmuller Textile High School, died last month.

George A. Martin, 80, paint and chemical pioneer, and board chairman of The Sherwin-Williams Co., Cleveland, Ohio, died there recently. He was a leader in the paint and color industries for the last 50 years, after leaving school at the age of 12 to work in the Chicago stock yards.

Fred A. Matthes, 74, one of the owners of Spofford Cotton Mills, Wilmington, N. C., and chairman of the board of Tidewater Power Co., died at his home on Dec. 4.

Frank J. Sheble, 78, who was engaged in worsted and woolen yarn manufacturing in Philadelphia, Pa., for 46 years, died Nov. 30.

Charles C. Blanton, 86, president of Shelby Cotton Mills and president of Union Trust Co., Shelby, N. C., and a director in a number of cotton mills, died Nov. 24.

Albert E. White, vice president of Lesser Cotton Co., St. Louis, Mo., died recently. He was a former president of the American Cotton Shippers' Association.

T. S. Williamson, 88, vice president of the Gem Yarn Mfg. Co., Cornelius, N. C., and vice president of the Bank of Cornelius, died Dec. 13.

Alfred Holmes, 68, general agent and treasurer of the Ta-

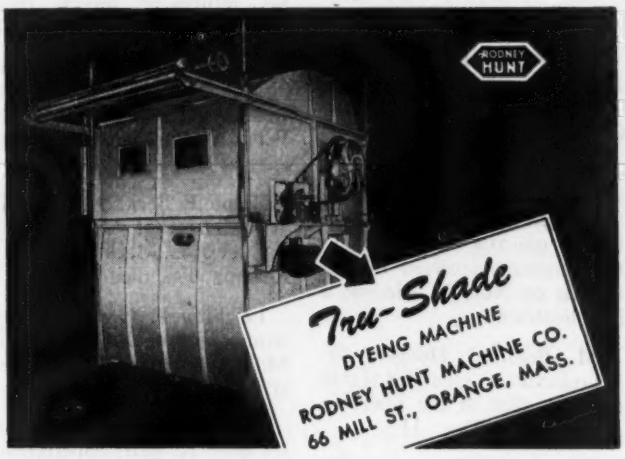
WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

W. E. CALDWELL CO.
INCORPORATED
2060 Brook St. Louisville, Ky.

Caldwell TANKS and TOWERS



How Fast and Safe will Samples DRY? IN EMERSON OVENS

Samples are safe from scorching without constant attention of operator

Electrically heated, and temperature controlled by thermostat.

Fans provide air circulation.

Bone-dry weights determine moisture regain in fabrics, yarns, raw materials.

Scales for weighing samples in oven operated without opening oven door.

Savings made by checking specifications for each manufacturing department.

10 basket oven for samples of ½ lb. or more
10 cylindrical baskets 8" diameter—9" deep.
Or 8 baskets or reels 7"x7" and 18" deep
or 20 large skeins dried from hooks.

EMERSON APPARATUS CO.

177 TREMONT ST. • MELROSE 76, MASS.

SEARCHLIGHT SECTION

(Continued on pages 225-233)

POSITIONS VACANT

KNITTER AND mechanic on seamless hosiery machines. Excellent opportunity. Apply—Ainslie Knitting Machine Co., Inc., 750 Grand Street, Brooklyn, N. Y.

FOREMAN FOR mill operating twenty narrow ribbon looms. Must be loom-fixer; understand how to calculate costs. Salary $70.00 per week. In answering state age, experience and references which will be kept strictly confidential if now employed and wish to make a change. P-163, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: EXPERIENCED textile man, preferably with textile school training, who can —teach loom fixing on C&K S-3 looms give classes in rayon weaving and throwing, and has good knowledge of latest developments in synthetic yarns and textile machinery. Give full details regarding experience and salary expected. P-164, Textile World, 330 W. 42nd St., New York 18, N. Y.

WORKS MANAGER. Manufacturer of plastic film seeks works manager who has had experience in production with a cotton converter. Capable, experienced in detailed factory operations. $12,000-$15,000. P-165, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: A textile engineer well-versed in all processes connected with manufacture of cotton and rayon from the staple to the finished goods. We want this man on a consultant basis and he must be available for six days per month in New England or New York. This man must be capable of imaginative constructive thinking. Excellent opportunity for some attractive earnings on the side—Possibility of permanent connection. P-166, Textile World, 330 W. 42nd St., New York 18, N. Y.

DYER AND Dye Tester—Experienced Ohio producer of dyestuffs requires immediately an experienced man familiar with latest technique of dyeing all types of fibres used in textile industry. Applicants should give complete information including past experience and training, salary desired in first letter. P-167, Textile World, 330 W. 42nd St., New York 18, N. Y.

Dyeing & Finishing
Expeditor
Woolen Textiles

National converting organization requires resourceful energetic man to secure extensive dyeing and finishing facilities and follow up progress of work.
May consider former Dye Stuff Salesman. Splendid present and post war opportunity. Send full details including salary wanted.

Box 419, Realservice, 110 W. 34th New York

WANTED
Hosiery Knitting Machine FIXERS
for
Scott and Williams
and
Acme Machines
Bonuses

Locate with a company that has an enviable record for Steady Employment

P-150, Textile World
330 West 42nd St., New York 18, N. Y.

HEAD OF TEXTILE LABORATORY

Cotton, Wool and Rayon fibre technologist familiar with all physical testing methods. Chemical analysis desirable. Quality control through statistical analysis. Research. Location, New Hampshire.

P-146, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
KNITTING MACHINE FIXER

If you have experience on Wildman Circular Spring Beard needle machines, models FBSS and FBSS-6, here is an excellent opportunity for you. Virginia plant of nationally known AAA-1 Company has opening now at good salary and offers an exceptional future. Write in detail.

P-158, Textile World
520 N. Michigan Ave., Chicago 11, Ill.

Opportunity for Promotion Man With Textile Mill Experience

Prominent textile publication has opening in its advertising department for a promotion man who combines advertising writing ability with intimate knowledge of textile mill operations. Apply, giving complete details of past experience, age, draft status and salary requirements to

P-162, Textile World
330 W. 42nd St., New York 18, N. Y.

(Additional Employment Ads on Page 225)

CALIFORNIA
HAND PRINTS
Announces
Post-War
Expansion Program
Looking ahead to post-war activity, California Hand Prints has acquired a four-and-one-half acre site in Hermosa Beach, with buildings providing more than 80,000 square feet of floor space—to be improved with every modern facility for the increased production of finest hand-printed
Drapery and Table Textiles
OF DISTINGUISHED ORIGINALITY

California Hand Prints
TWO PLANTS IN HERMOSA BEACH, CALIFORNIA

INDUSTRIAL ENGINEERS
Specializing in
TEXTILES FOR MORE THAN A QUARTER OF A CENTURY
RALPH E. LOPER CO.
COST SYSTEMS WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS SPECIAL REPORTS
GREENVILLE, S.C. FALL RIVER, MASS.

CHAPMAN
STATIC
NEUTRALIZER
Reduces waste and Stabilizes the production rate in many operations
USED ON
CARDS - CONDENSERS - DRAWING FRAMES
SLASHERS-WARPERS-GARNETTS-FOLDERS-DRYERS
NAPPERS - SHEARS AND MANY OTHER MACHINES
CHAPMAN ELECTRIC NEUTRALIZER CO.
BOX 268, PORTLAND, MAINE

bardry Mfg. Co., Haw River, N. C., died Nov. 21. In early life he was manager of Nonquitt Spinning Co., New Bedford, Mass. He went to Haw River in 1929 as general superintendent of the Tarbardry mills.

Charles T. Colony, 77, for several years treasurer of Cheshire Mills, Harrisville, N. H., is dead. The mills were founded by his ancestors.

Wm. P. Hornbuckle, 70, connected with Gaston County Dyeing Machinery Co., Stanley, N. C., died recently.

Joseph W. Hawthorne, 47, assistant secreatry of Jewel Cotton Mill, Thomasville, N. C., died Nov. 2.

Thomas C. Leak, Jr., Rockingham, N. C., textile executive, was killed in action in France on Aug. 27, according to a message received by his mother on Nov. 14. He was a first lieutenant.

M. Bradford Hodges, 51, manufacturers' agent for textile supplies, died at his home in Atlanta, Ga., Dec. 11.

Edwin C. Gammage, 87, for nearly 50 years a textile designer for Perseverance Worsted Co., Woonsocket, R. I., Paragon Worsted Co., Olneyville, R. I., and other manufacturers, died at Providence on Dec. 11. He retired in 1931.

Howard L. Hoff, 79, for many years he was secretary-treasurer of Vanity Fair Silk Mills, Reading, Pa., but lately retired, died Dec. 2.

James Ira Somers, 51, Burlington, N. C., secretary-treasurer of Fogleman-Jeffries Hosiery Corp., died Nov. 27, at his home in Burlington.

Harry Metcalfe, for many years overseer of dyeing at Great Falls Bleachery & Dye Works, Somersworth, N. H., died recently in East Orange, N. J.

William Francis (Bill) Everett, 51, assistant superintendent of the Laconia, N. H., plant of Scott & Williams, Inc., died recently at the Veterans' Hospital at White River Junction, Vt. He was born in Newfoundland and was a veteran of World War I.

S. R. Bergman, 67, consulting engineer in the Thomson laboratory of General Electric's Lynn, Mass., River Works, died Nov. 25. Several years ago he developed the standard direct-current generator for arc welding. He also produced a high-speed bucket for rayon spinning.

William W. Weeden, 74, formerly superintendent of Weybosset Mills, and later agent for Manton Mills of American Woolen Co. in Rhode Island, lost his life in an accident at Charleston, S. C., on Dec. 7. He was an engineer with Lockwood, Greene & Co., Boston, Mass., prior to his retirement several years ago.

George E. Whitney, 80, former resident manager of Champlain Mills of American Woolen Co., Burlington, Vt., died in that city on Dec. 8.

Ralph I. Beck, 48, foreman in the electrical department of the Textile Machine Works, Reading, Pa., died Dec. 12.

Leighton P. Cook, 60, superintendent of Elliott Hosiery Mills, Hickory, N. C., died at Reading, Pa., Nov. 26.

Wm. Arthur McNeace, 54, for over 10 years superintendent of weaving at American Spinning Co., Greenville, S. C., died Dec. 9.

Marvin Sylvester Chipley, 60, a member of the New Orleans Cotton Exchange, New Orleans, La., died recently. Interment was in Greenwood, S. C., his native city.

Herman Walter Thomas, 63, who installed the machinery in Oakland Cotton Mill, a unit of The Kendall Co., Newberry, S. C., 33 years ago, and who had been superintendent of the weaving department since that time, died Dec. 10.

Anders R. Akerstrom, 61, for 25 years a technician representative of the National Aniline Division of Allied Chemical & Dye Corp., of New York, working with the textile trade out of the Charlotte, N. C., office of the company, died Dec. 7, at Greensboro, N. C.

Philo E. Gregory, 43, electrician for Union Buffalo Mills, Union, S. C., for many years, died Nov. 21.

Judson Wesley Wright, 61, retired overseer of weaving at Revolution Cotton Mills, Greensboro, N. C., died last month. He retired in November, 1941.

NEWS ABOUT Mills

Cotton Mill News

Abbeville Mills, Abbeville, S. C., was damaged by fire to the amount of about $5,000 on Nov. 17, in the spinning room of the mill.

Aldora Mills, Barnesville, Ga., have just completed a program costing about $200,000 for the enlargement of the mills. Contract has been awarded to Frank Binford Construction Co. for completely modernizing the two villages, which includes building 45 new houses. This new contract calls for an expenditure of over $400,000.

Anchor Rug Mills, York, S. C., owned and operated by F. T. Cloniger, J. C. Cloniger and J. P. Erkes, have been started up and the company is now producing about 3,000 rugs weekly. Rugs for bathroom and bedroom are manufactured in the firm's plant in Rock Hill, S. C., and finished at the York plant.

B. & G. Yarn Co., Cottondale, Ala., plans the early rebuilding of two mill units recently destroyed by fire, with a loss estimated at about $100,000, including machinery, as previously reported.

Brookside Mills, Knoxville, Tenn., have received a building permit from the city authorizing $8,000 worth of interior remodeling.

Crest-Tex Mills, Inc., New York, has been formed by Morris David and Courtland Palmer to purchase the Haleyville and Russellville, Ala., plants of Alabama Mills, Inc. D. H. Morgan is general manager. J. E. Bostick is superintendent at Haleyville and R. L. L. Davis is superintendent at Russellville.

Dundee Mills, Griffin, Ga., have let contract to Newton Coal & Lumber Co., Griffin, for two-story addition. Cost reported close to $40,000, with equipment.

Futurity Thread Co., Newton, Mass., has begun erection of one-story addition, including improvements in present mill, for which contract was let recently to Richard White Sons, Inc., 67 Cherry St., West Newton, Mass.

Harmony Grove Mills, Commerce, Ga., plan construction of an addition to cost $43,379.

Henderson Cotton Mills, Henderson, N. C., recently sustained a loss reported over $50,000, when warehouse building was destroyed by fire.

Hillsborough Mills, Hillsborough, N. H., of which Samuel L. Abbott is superintendent, have purchased the Wilton Hotel, Wilton, N. H.

New Braunfels Textile Mills, Inc., New Braunfels, Texas, have awarded the general contract to Alfred Herry, of New Braunfels, for a one-story addition, measuring about 50x180 ft., to cost more than $80,000, with machinery. The installation will include 116 looms and auxiliary equipment. Robert & Co., engineers, Atlanta, Ga., prepared the plans.

United States Rubber Co. has received WPB and WMC approval of plans for a textile-rubber plant at Burlington, N. C., and soon will begin the installation of machinery in the former Daisy Hosiery Mill plant. The machinery will cover wire or other core material with rubber or will cover rubber strands with cotton yarn. It is expected that 62% of the output will be rated orders for rubber-covered wire, and about 30% rated orders for yarn-covered rubber. Postwar production will be principally elastic yarns to serve hosiery manufacturers in the area.

Utica & Mohawk Cotton Mills, Inc., Utica, N. Y., has purchased the Seneca, S. C., mill and village of the Lonsdale Co.

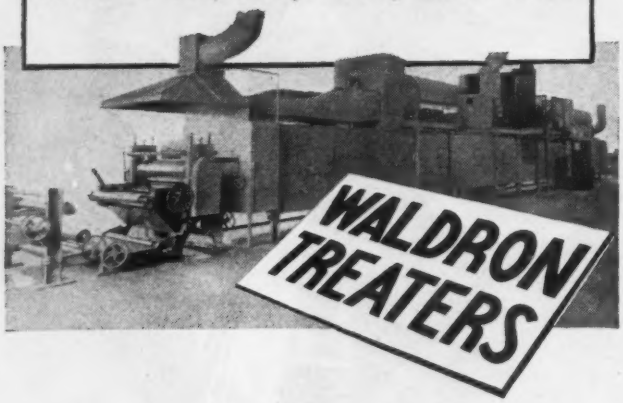
Utica Wadding Co., Inc., Utica, N. Y., has removed its

RED RAY RADIANT HEAT BURNERS
SPEED UP DRYING OF THICK FELTED GOODS
A single 119 inch Red-Ray Burner applied to cans for drying inch thick felted material. Drying speed increased 60 per cent.
WRITE FOR COMPLETE DETAILS
RED-RAY MANUFACTURING COMPANY
455 W. 45th STREET — NEW YORK, N. Y.
Southern Representatives:
CAROLINA SPECIALTY COMPANY CHARLOTTE, N. C.
New England Representative: G. D. YEATON Hornbine Road, Swansea, Mass.
Canadian Representative: RUDEL MACHINERY CO., LTD. 614 St. James St., W., Montreal, Can.

TESTING helps speed Reconversion
An adequate testing routine gives you the Control that speeds all the steps in reconversion—purchasing, research, production, acceptance-inspection. The 60 models of *Scott Testers span the field of textile testing for tensile, hysteresis, crepeage, twist, flexing, burst, etc., from single hair to 1 ton.
SCOTT TESTERS
*Registered Trademark
HENRY L. SCOTT CO. 95 BLACKSTONE ST. PROVIDENCE, R. I.

NOVELTY-YARNS
For
WEAVERS-KNITTERS
MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

Processing CLOTH
with Plastics in solution

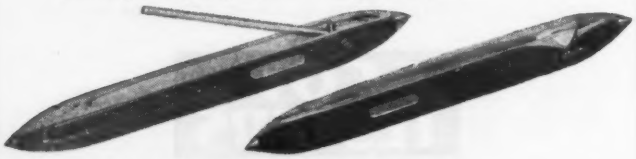


Complete machine line fills fibres or coats surface of material in web form with plastics in solution — unrolls, impregnates or coats, dries, cools, guides and rewinds.

Our new 20 page Catalog No. 112 describes in detail the mechanical features of WALDRON Treaters. Explains most modern processing for plastics treated products.

JOHN WALDRON CORP.
Main Office and Works
New Brunswick, New Jersey
MACHINES

For FIBRE SHUTTLES
Whatever the Weaving Requirements
— depend on WATSON-WILLIAMS, the Shuttle People, with over 100 Years experience and originators of the century's leading Shuttle improvements.



WATSON-WILLIAMS MFG. CO., Millbury, Mass.
SOUTHERN OFFICE: W. F. Daboll, John W. Littlefield, 810 Woodside Building, Greenville, S. C.
NORTHERN REPRESENTATIVE: G. C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass.

J. E. SIRRINE & CO.
GREENVILLE • SOUTH CAROLINA
Engineers
TEXTILE MILLS • CHEMICAL PROCESS PLANTS
PULP & PAPER MILLS • WASTE DISPOSAL
STEAM POWER PLANTS • STEAM UTILIZATION
WATER • APPRAISALS • PLANS • REPORTS

offices and plant to a new location at 605 East 132nd St., the Bronx, New York, N. Y.

Wool Mill News

American Hair & Felt Co., Newark, N. J., has filed plans for one-story addition, 44x280 ft., to cost close to $50,000, with equipment. Erection contract has been let to E. M. Waldron, Inc., 40 Park Pl., Newark.

De Kuyper Woolen Mills, Inc., Philadelphia, Pa., have taken over the Dorence Worsted Co. at 1615 Foulkrod St. The De Kuyper firm operates 50 broad looms and gives out commission weaving for 110 broad looms. Eli L. Bernard is president; Benj. N. Vollen, treasurer; Benj. Bruce, agent; John Vause, superintendent. Sales offices are in Empire State Bldg., New York.

Esmond Blanket Co., Esmond, R. I., has leased two mills at Dover, N. H., formerly used by Pacific Mills, now owned by city, and will occupy for branch plant. Equipment and facilities will be installed for working force of about 300 persons.

Ivanhoe Blanket Co., North Oxford, Mass., sustained a fire loss recently, when portion of mill was destroyed, estimated over $45,000. It is planned to rebuild.

A. & M. Karagheusian, Inc., Roselle Park, N. J., have superstructure under way on new one-story addition, about 36,000 sq.ft., floor space, for warehouse service, estimated to cost over $75,000, with equipment. Wigton-Abbott Corp., Plainfield, N. J., is general contractor.

Stanley Woolen Co., Uxbridge, Mass., has made a one-story addition to its finishing department for installation of new drying equipment.

Uxbridge Worsted Co., Uxbridge, Mass., has plans for two-story addition, 128x130 ft., to cost over $80,000, with equipment. Application has been made for a priority rating.

Wyandotte Worsted Co., Rochester, N. H., has let contract to W. M. Bailey Co., 88 Broad St., Boston, Mass., for two-story addition, 35x150 ft., reported to cost over $75,000.

Knitting Mill News

Batesville, Miss. — Town Council is having plans prepared for new one-story mill, to be occupied by a manufacturer of hosiery, name temporarily withheld, under long-term lease. Bond issue of $60,000 has been voted by municipality for building. Erection bids will be asked soon. E. L. Malvaney, Jackson, Miss., is architect.

Beaunit Mills, Inc., Lowell, N. C., has work under way on one-story addition, reported to cost close to $35,000, with equipment. Erection contract was awarded recently to Robert H. Pinnix, Gastonia, N. C.

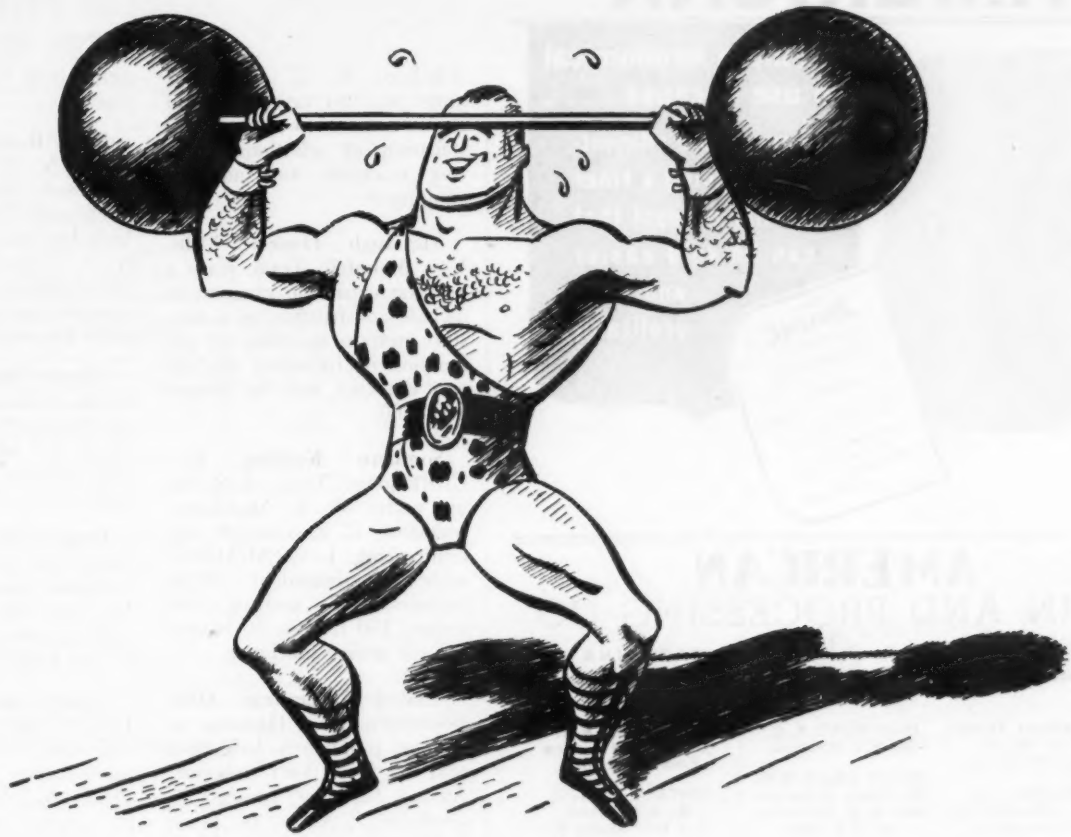
Braeknit Sportswear, Inc., 1370 Broadway, New York, N. Y., plans new one-story knitting mill at Miami, Fla., where site is being secured. Project is understood to be a postwar development.

Brookwood Fabrics, Inc., recently chartered, has purchased the Liledoun Mill, Taylorsville, N. C., from the owner and operator, R. S. Ferguson. Clarence A. Ross is president of the new concern, which has its headquarters in Gastonia, N. C. The incorporators are: Clarence A. Ross, Cy Girard, Herbert Girard, and Sam R. Girard, all of Gastonia. These men are all interested in Central Yarn & Dyeing Co., and Hillcrest Knitting Co., Gastonia, and Fairmont Fabrics, New York. At present the mill is engaged entirely in the manufacture of 20s to 30s yarns, but the products will be changed to knitted fabrics.

Campbell Hosiery Mill, Chattanooga, Tenn., recently started up with 40 operatives and the following equipment: 16 knitting machines, 6 ribbers, 16 loopers, and 3 sewing machines. It already plans expansion.

Chadbourn Hosiery Mills, Inc., Burlington, N. C., have voted to increase capital stock of the company to $1,000,000. J. C. Bolles, president, said a large number of modern knitting machines already are on order for delivery as soon as civilian manufacture is resumed.

Harvelle Hosiery Mills,



Keeping Fit

Keeping your knitting machines in peak condition to meet continuing war demands is, of course, one of your first concerns. But don't forget that many of the machines you are using now must stay on the job even after war requirements ease up. You will need them to meet pressing civilian needs for better merchandise before your new equipment can be installed.

This requires more than just temporary repair of worn-out parts and appliances. It calls for a long range plan of systematic maintenance and replacement. Scott & Williams service engineers will gladly make a survey of your S & W knitting machines—without charge or obligation. From this survey we can make suggestions for reconditioning and replacements . . . and for any adjustments that may be needed. Here is a service that will not only relieve you of a difficult and time-consuming job but pay dividends in increased machine efficiency, less yarn wastage and fewer rejects. And, of course it will help to put you in a better position when shifts to civilian production are made.

Write, phone or wire S & W for more complete information.

The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point, N. C., offices.

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

ESTABLISHED 1865

SCOTT & WILLIAMS

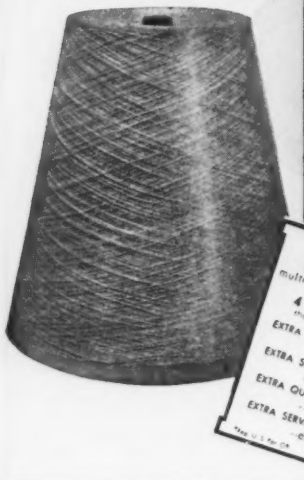
INCORPORATED

BUY WAR BONDS FOR VICTORY

EMPIRE STATE BUILDING NEW YORK 1, N. Y.

SOUTHERN SALES OFFICE: HIGH POINT, NORTH CAROLINA

AMERICAN



...more economical to use because....

it runs more efficiently, producing a finer quality product that can be sold easier and more profitably

AMERICAN
YARN AND PROCESSING CO

MOUNT HOLLY, NORTH CAROLINA

CHATTANOOGA, TENN.
Mr. Tom Moore
735 Chestnut Street

PHILADELPHIA, PA.
Mr. Wm. S. Montgomery
3701 N. Broad St.

HIGH POINT, N. C.
Mr. E. J. Holbrook

MOUNT HOLLY, N. C.
Mr. Edwin Hutchison
Miss E. R. Abernethy
Mr. T. J. Davis

NEW YORK, N. Y.
Mr. Rowland Swallow
Empire State Bldg.

CHICAGO, ILLINOIS
Mr. E. W. Wood
222 West Adams St.

"YOU CAN COUNT" ON WAK COUNTERS"

They are

RUGGED

ACCURATE

DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write — Phone — Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

PENETRANTS • DETERGENTS
REPELLENTS • SOFTENERS
FINISHES

BURKART-SCHIER CHEMICAL CO.
CHATTANOOGA, TENNESSEE

Asheboro, N. C., has work under way on extensions and improvements to include installation of additional knitting machines and auxiliary equipment.

McGaugh Hosiery Mills, New Braunfels, Texas, plans a post-war expansion program to include construction of a one-story mill to specialize in nylon hosiery. Including machinery, the cost will be around $100,000.

Southern Knitting Co., Chattanooga, Tenn., is operating under W. L. McAllister, president; C. E. Goerigs, superintendent; J. C. McMahan, night superintendent. Plant includes 302 knitting machines, 150 ribbers, 50 loopers and 20 sewing machines.

United Underwear Mills, Boyertown, Pa., Hartman & Knouse, proprietors, have been sold to New York interests. Among the new owners are Ovide de St Aubin, Jr., James L. Ohayer, and John A. Moss.

Rayon & Silk Mill News

American Viscose Corp.'s plants at Lewiston, Pa., and Parkersburg, W. Va., have completed installation of cord-twisting machinery and looms for weaving rayon tire-cord fabric. This equipment was installed at the request of WPB to increase production of rayon tire fabric needed for heavy-duty tires for bombers, fighter planes, army motor vehicles and artillery, and commercial buses and trucks. The Lewistown plant in June, 1944, completed conversion of a portion of its rayon yarn producing facilities to manufacture approximately 20,000,000 lb. annually of high-strength rayon for tires. This yarn can now be twisted and woven into tire fabric by the new equipment just installed. The Parkersburg plant will obtain its high-strength yarn from the Viscose plants at Front Royal, Va., and Marcus Hook, Pa. The Front Royal plant is currently being expanded by government order to produce approximately 82,000,000 lb. a year of high-strength rayon tire yarn by the addition of a new unit just going into production which will not reach its full production of 57,000,000 lb. until about the middle of the year.

R. G. Buser Silk Corp., Paterson, N. J., has purchased mills and business of John C. Wellwood Corp., New York, including plants at Belvidere, N. J., Norwich, N. Y., and Murfreesboro, Tenn., and will continue operation of all three mills for expansion in output.

Cheney Bros., Manchester, Conn., have work under way on one-story addition to dye house, for which general contract recently was let to Alexander Jarvis Co., Manchester.

Peerless Weaving Co., Inc., Pawtucket, R. I., has leased two floors in mill at 55 Sabin St., and will take possession early in spring, when space will be equipped for expansion.

Zephyr Looms & Textiles Ltd., Guelph, Ont., will erect and equip a plant for spinning rayon-staple yarns and blends. Brooks Stevens, Jr., president, is considering locations in Western Quebec and Eastern Ontario. G. Lorne Wiggs & Co., consulting engineers, of Montreal, have been engaged.

Processing Plant News

California Hand Prints, Hermosa Beach, Calif., has acquired a 4½-acre site in Hermosa Beach with buildings providing over 80,000 sq. ft. floor space. Production will be hand-printed drapery and table fabrics.

Hannah Pickett Dyeing & Finishing Co., Rockingham, N. C., has been granted a certificate of incorporation to engage in dyeing and processing materials, with authorized capital of $500,000, $700 of the stock subscribed by W. B. Cole, Mrs. Elizabeth L. Cole, John W. Patterson, all of Rockingham, and others. The company is an affiliate of Hannah Pickett Mills.

Palatine Dyeing Co., St. Johnsville, N. Y., has tentative plans for rebuilding a portion of mill recently damaged by fire. Loss reported close to $75,000, including equipment.

Union Bleachery, Greenville, S. C., has begun construction of an addition to the office building to provide 25 ft. additional space.

WANTED

PRODUCTION MANAGER BRAIDED RUG MILL

Large eastern cotton rug manufacturer has opening in organization for production manager in braided rug division; excellent future for right man who must be conversant with all phases of business including raw materials, labor training, styling. State full details experience, age, compensation desired, etc. All replies will be held strictly confidential.

P-994, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED—MANAGER

For cotton mill making colored yarn fabrics, suitings, coverts, tickings, denims, sale yarns. Must have knowledge of mill, office, fabric development, sales, and be capable of assuming many responsibilities. Location deep south.

P-161, Textile World
520 North Michigan Ave., Chicago 11, Ill.

Full-Fashioned Fixer

Ladies' Full-fashioned Hosiery Machine Fixer. Must know German & Reading Machines. Excellent pay with unusual post-war opportunity. Write in detail.

P-151, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

WORSTED SUPERINTENDENT

for 20,000 spindle mill. Must know process on raw wool to finished yarn. Prefer man around fifty years of age, with engineering background.

P-115, Textile World
330 W. 42nd St., New York 18, N. Y.

YOUNG MAN

Contact commission weaving mills. Secure weaving facilities, expedite deliveries, keep production control records. Good textile education, knowledge of facilities; intelligently aggressive. Write details including salary. Box 434, Realservice, 110 West 34th St., N. Y. C.

Position Vacant

SALESMAN-TECHNICIAN

Position open in post war program of established company to call on textile and paper mills as salesman and technician, to sell and demonstrate chemical products. Prefer chemical or mechanical training — under 35 years old. Salary would depend on qualifications and experience. State full particulars as to age, nationality, education, experience and family status.

SW-152, Textile World
330 W. 42nd St., New York 18, N. Y.

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL

Interesting booklet concerning Inventions, Patents, Trade-Marks and Copyrights, together with Schedule of Government and Attorney's Fees, sent without obligation. Simply ask for "booklet and schedule."

Established 1915
Patents & Trade-Marks
Suite 448, 815—15th St., N.W., Washington 5, D. C.

POSITIONS VACANT
(Continued from page 219)

WANTED: CHEMIST thoroughly experienced in textiles, by important chemical manufacturer now selling the textile industry. Must be qualified to direct research and aid in the development of textile chemicals. Give full particulars as to experience, education, and salary expected. Include photograph. P-168, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

INDUSTRIAL ENGINEER with mechanical engineering background. P-169, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED

NYLON HOSIERY tram throwing. Post-war plans of a large hosiery mill. A technical and practical superintendent of modern throwing desires to contact a hosiery mill contemplating their own nylon throwing department. Married, age 38, location no object. PW-913, Textile World, 330 W. 42nd St., New York 18, N. Y.

OVERSEER OR Head fixer of knitting room. 23 years experience, 6 years mechanical development in large textile mill. Thoroughly familiar with all equipment of hosiery, underwear, knitting and sewing machines. PW-140, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WANTED JOB—boss knitter or production manager, 23 years experience. Give best of reference. Personal interview if desired. PW-103, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

SUPERINTENDENT or weaving overseer. Thoroughly experienced on continuous filament broad goods, on upholstery, and on pile fabrics, in plants ranging from 120 to 2,000 looms of many types, in all phases of operation ranging through weaver, twister, loom fixer, foreman, inspector, instructor, assistant to manager, personnel manager and installation supervisor. PW-170, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPT. OR overseer weaving warping slashing cotton rayon nylons spun rayons dress goods satins shirting twills linings crepes novelty fabrics Draper Stafford box looms at present employed as boss weaver assuring quality production and low cost. PW-171, Textile World, 330 W. 42nd St., New York 18, N. Y.

EXPERIENCED TEXTILE man desires yarn accounts Penna. and surrounding territory. PW-172, Textile World, 330 W. 42nd St., New York 18, N. Y.

KNITTED FABRICS finisher specializing in woolen worsted and blended jersey cloth, sweater suiting top coating fabrics. Desires position now with mill planning post-war production. Excellent references. PW-173, Textile World, 330 W. 42nd St., New York 18, N. Y.

TRICOT MILANESE expert mechanic wants change like to locate near New York City or Penna. 25 years experience, middle aged. PW-174, Textile World, 330 W. 42nd St., New York 18, N. Y.

SALESMAN WANTED

SALES ENGINEERS, preferably with chemical or mechanical background, wanted by well-known industrial instrument company looking forward to post-war expansion. Work requires persistence and ability to cooperate as consultant with prospects rather than high pressure selling. Positions open in several sections of the country. SW-175, Textile World, 330 W. 42nd St., New York 18, N. Y.

Representations or agencies from manufacturers of textile machinery and accessories wanted

Firm established in Sao Paulo City (Brazil) with textile material trade, well introduced in the Brazilian market, maintaining a reliable and perfectly acquainted team of salesmen, desires to obtain agency or representation for the same line. Would agree trading for own account too.

The proposals are to be sent to:
Comércio De Máquinas E Acessórios
"AM - BRA" LTD.
rua Conceicao, 134-30 and. Apto. 302
P. O. Box n. 5234, SAO PAULO (Brazil)

SALESMAN AVAILABLE

WANTED: Connection in Mexico or South America by man with 15 years textile experience in laboratory, plant and technical sales work. Draft exempt. SA-176, Textile World, 330 W. 42nd St., New York 18, N. Y.

REPRESENTATIVES AVAILABLE

TEXTILE AGENTS: Agencia Metropolitana, P. O. Box 1981, Caracas, Venezuela, would like to start negotiations, with a view to immediate and post-war business of representing first class manufacturers and exporters in cotton, rayon, coloured woven, plain and printed piece goods, and will be pleased to consider offers in other fashion lines, as ribbons, scarves, hosiery etc.

WANT SALES representation for manufacturer of slipcovers-drapes-reupholstering materials in Chicago and environs. RA-178, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WANTED

WANTED "Science of Knitting" by E. Tompkins. Will pay original price ($2) for used copy. Just send to Editor, Textile World, 330 W. 42nd St., New York 18, N. Y. Check will be mailed promptly or book returned.

WANTED

Rayon & Cotton Weaving Mill

by converter, who is willing to make outright purchase or will consider investment on partnership basis.

BO-159, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

WANTED

FOSTER WINDER

Good Condition

W-157, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

36 spindle reducer, 9 x 5 bobbin, 4" front roll, 2¼" back roll. Preferably Saco-Lowell or Whitin.

W-160, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

2—RAG OR SHODDY PICKERS

Give age, description and price

W-156, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

A GARNETT CARD

State full Particulars

W-153, Textile World
330 W. 42nd St., New York 18, N. Y.

(Additional Wanted Ads on page 232)

THERE ARE MANY ATTRACTIVE OPENINGS IN MILLS

In all sections of the United States and Canada. If you are seeking employment, write us fully regarding your experience and position desired; we will inform you of positions now open in your line of work.

CHARLES P. RAYMOND SERVICE, Inc.
294 WASHINGTON STREET BOSTON 8, MASS.
Over 45 years' confidential employment service for men seeking positions and employers seeking men.

Selling Opportunity Advertising—Page 226

TOMORROW'S PROBLEMS
CANNOT BE SOLVED BY
YESTERDAY'S METHODS

WANTED

COTTON MILL OWNERS WHO ARE INTERESTED IN SELLING DIRECT TO THE MANUFACTURER WITHOUT CREDIT RISK TO THE MILL.

We are one of the larger, well known distributors of finished textiles.

An enviable reputation of long standing ensures a continuance of cooperation from the trade.

Our creative styling and ability to interpret trends is recognized in cottons, rayons and mixtures.

Established Trade Names.

Excellent promotional record.

National and International distribution.

Communications strictly confidential.

Henry Kaiser recently said "The war has advanced science, invention and technology by decades.

We are ready to build 1960 models of almost everything."

This also applies to textiles.

Under pressure of the war emergency, there have been developed:

New Fibres
New Weaves
New Finishes
New Blends of Fibres
New Uses

NEW METHODS OF DISTRIBUTION

Let no one delude himself. We shall have to throw off the inertia induced by the temporary prosperity of war.

Close cooperation will be necessary from the cotton fields in the South, through expert knowledge and intimate contacts, to the ultimate consumer.

Are you in a position to go ahead with

POST WAR BUSINESS?

Write
RA 145 TEXTILE WORLD
330 West 42nd St., New York 18, N. Y.

Here's melancholy Mr. A—
Who wastes his time day after day
Accumulating gripes and glooms
In vain and fruitless search for Looms,
For Spinners, Dyers, Shears or Pickers...
O'er Bargains good and bad he dickers;
He can't tell where to Buy or Sell,
In short, his mill is shot to Troy.
How different Mr. A. would be
If he'd buy and sell through ◂MLC▸!

And this is jolly Mr. B—
A customer of ◂MLC▸!
He quickly found his needed equipment;
And ◂MLC▸ has just made shipment!
And what's particularly nice
Was the fair-to-everybody price!
He's tickled how ◂MLC▸ too,
Bought *what he didn't need—p.d.q.!*
Moral—don't let things get you nervous
Just contact ◂MLC▸ for SERVICE!!

And Speaking of ◂MLC▸ Equipment

Here's some we now have ready for Shipment!

3—46" x 52" Button Breakers
3—42" Butterworth 3-Roll Friction and Rolling Calender, 1—motor driven, 2-belt dr.
1—3 Cyl S & F Card Set 48" with feeds.
1—60" D. & F. 2-cyl. Iron Shoddy Card
2—100 Spindle Foster Model 25 Doublers
1—36" Doubling & Winding Machine
1—68" P.&W. Doubling Machine, Mtr. Dr.
1—46" Windle Doubler
1—60" Windle Doubler, Winder and Measurer
1—6 Delv. Whitin Drawing Frame with 12" coiler, and motor
1—4 and one 6 delv. H & B dr. frame
1—28" Stick Klauder Weldon Skein Dyeing Machine
1—Franklin Package Dyeing Unit, incl. three 100-lb. and one 300 lb. machine, extractor and winders
1—Laboratory Hydro Extractor
1—30" American Laundry belt driven extractor
2—Hunter No. 10 Fulling Mills
10—40" C&M 42", 46", 50", 100" Folding Machines
1—52" James Smith Card Grinder
8—1200 h. Halton Jacquards, 9" lift
60—42" Modified "E" Draper with roller tops, 47½" reed space, belt driven
18—82" C & K 4 x 4 25 Harness Belt driven woolen looms
1—40" D & F Mixing Picker
2—40" H & B Single Process Pickers

SPECIALS

1—80" Butterworth 3 roll Calendar
1—Complete Set Combers including:
1—Whitin Ribbon Lapper
1—Whitin Silver Lapper
8—Whitin Model "C" Combers
12—76" cloth Draper modified D automatic Looms, 81" reed space with Lacey tops for 6 harness work, motor driven.
1—90" D.&F. Single Acting 14 Roll Napper
1—80' Butterworth clip Tenter with 80" opening.
1—92" D & F Warpers with Beamers
4—82" D.&F. Warpers with Beamers, etc.
2—54" Entwistle Warpers

1—Wm. Schofield Rag Picker, Reconditioned
1—24" Parkhurst Burr Picker, Reconditioned

2—C&M Fearnaught Pickers, 40" and 48"
1—66" Voelker Cloth Press
2—50" Dinsmore Inspecting, Sewing & Rolling Machines, Mtr. Dr.
1—41" Monforts 3 Blade Cotton Shear
1—60" C & M Plush Shear, Arranged for Mtr. Dr.
3—66" C & M 2-Blade Shears
4—66" P & W 2-Blade Shears
1—66½" P & W Model A 2-Blade Shear
1—72" Monforts 2-Blade Shear
1—Schultze 106" Double Shear
1—Smith & Furbush Rag Shredder
1—42" C. & M. 5 Burner Gas Singer
1—82" Saco Lowell hot air Slasher
1—Phillips 2 cyl. cotton Slasher
1—Single cyl. Saco Lowell Slasher
6—24 Spindle Fairmont Drum Spoolers for 4½ x 6" spools
10,000—4½ x 6" Wooden Spools
6—120 Spindle Draper Spoolers wi. Tensions
2—Warp Compressor Machine Co., Multiple Jack Spoolers
1—60" C & M Tiger, Arranged for Mtr. Dr.
4—20 Spindle Universal #90 Filling Bobbin Winders, bottom supply
4—100 Spindle Foster #12 tube winders, belt driven
1—200-spindle Draper 2¼" Ring Tape Drive Twister
1—Barber Coleman Auto. Warp Tying Mach., size 4-E
24—72" Stafford 2x1 automatic Looms 77" reed space, 25 harness head motions, motor driven.

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. 1923

31-33 West 42nd Street — NEW YORK 18, N. Y.

DOMESTIC — TELEPHONE PEnnsylvania 6-8014 — EXPORT

DEALERS IN TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

THESE ARE MOVING RAPIDLY ! !

LAST MONTH WE HAD 186 DRAPER 45" REED SPACE MODEL E LOOMS, COMPLETE WITH PICK COUNTERS AND WARP STOPMOTIONS. WE CAN STILL OFFER 152 OF THESE FINE LOOMS AT THE SAME ATTRACTIVE PRICE THAT HAS MADE THEM AN OUTSTANDING BUY.

12 Atwood 5B twisting doubling machines, 3⅜" Edie rings, individually motor driven.

50 Crompton & Knowles 4 x 1, 52" looms, roller bearing, shock absorber high pick-wheel, removable cloth rollers, individually motor driven, warp stop motions and pick counters.

28 Crompton & Knowles, 4 x 4, 82" reed space, 25 harness intermediate heads, large shuttle boxes, woolen looms, individually motor driven, complete with 1 HP, 3 Phase, 60 Cycle, 220 Volt motors.

24 Crompton & Knowles automatic looms, 4 x 1, 30 harness dobbies and multipliers, 52" reed space, individually motor driven, pick counters, and warp stop motions.

24—48" Crompton & Knowles Worcester 2 x 2 box looms, 20 harness dobbies and multipliers, individually motor driven, warp stop motions, pick counters, paperless beams.

30—4 x 4, 72", Crompton & Knowles Worcester looms, roller bearing, shock absorber, motor driven, 1 HP, 3 phase motors, oversized shuttle boxes, extended bottom shaft for Jacquards.

LOOMS
WARPERS
WINDERS

COPPERS
SPINNING AND THROWING MACHINES

JACQUARD MACHINES
FINISHING MACHINES
DYEING MACHINES

TEXTILE MOTORS
SHUTTLES - QUILLERS
HARNESSES

CONTACT US FOR QUICK ACTION ON TEXTILE EQUIPMENT

PATERSON SILK MACHINERY EXCHANGE

24 SPRUCE STREET — SHERWOOD 2-1363-4 5 — PATERSON, N. J.

FOR SALE
Parkhurst 48 in. DUPLEX BURR PICKER
2—McCREARY BRUSHING MACHINES
One SPENCER OILER for PICKER
15—TOMPKINS KNITTING TABLES
EXTRA-CYLINDERS
(Both Spring & Latch Needles)
KNITTING PARTS
BURR-WHEELS
(All makes and Gages)
2—DAVIS & FURBER 80 inch NAPPERS
Davis & Furber 80" NAPPER GRINDER
Bruce Power DIE CUTTING MACHINE
McCREARY 4 roll STEAM CALENDER
3—Firschine SLITTING MACHINES
1—Ireland SLITTING MACHINE
1—Grand Rapids SLITTING MACHINE
1—Adams SLITTING MACHINE
4—PAYNE 40 sq. BOTTLE WINDERS
Geo. E. Smith Textile Machinery Co.
P. O. BOX 46 — COHOES, N. Y.

TEXTILE MACHINERY
ENGINEERS & EXPORTERS
Appraisals & Liquidations
S. B. SCHWARTZ COMPANY
7301 PLUM ST. — NEW ORLEANS, U.S.A.

KNITTING MACHINES
Scott & Williams — Banner — Wildman — Reading — Kalio — etc., etc.
All types of hosiery mill equipment on hand
THE MORRIS SPEIZMAN CO.
508-14 West Fifth St. — Charlotte, N. C.

HOSIERY MACHINES
KNITTERS - RIBBERS - LOOPERS
CYLINDERS - DIALS - TRANSFERS
RIBBER CYLINDERS & DIALS
UNION SPECIAL SEAMERS
NEEDLES FOR EXPORT
C. M. FRENCH
Commercial Trust Bldg., Philadelphia 2, Pa.

AIR COMPRESSORS
17—355, 528, 730 & 1100 ft. Cap.
TANKS ON TOWERS
25,000, 50,000, 70,00 & 100,000 Gal. Cap.
—Towers 25 to 156 ft. high.
R. C. STANHOPE, INC.
60 East 42nd St. — New York, N. Y.

FOR SALE
30" LOOMS
76—Draper 30" Model E used looms in good condition. Complete with Lacey top motions, pulleys, shafting, beams, etc. Located in South.
AMES BAG CO.
10 East 40th St. — New York, N. Y.

DIESELS
ROBERT SCHOONMAKER
Port Washington, Long Island, N.Y
Phone Roslyn 1220

FOR SALE
20 Paragon Braiders and large quantity of parts for same.
MURRAY LANDY
Blair & Schuylkill Aves., Reading, Penna.

"CONSOLIDATED" *January* OFFERINGS

DYE BECKS
12—Morrison & V.V. 6′ to 9′ Dye Becks, stainless steel and wood tubs.

DYE JIGS
4—Dye Jiggs, 54″ rubber covered rolls.
1—Battery 4—Morrison S.S. 50″, tilt. Expanders.
2—Morrison 60″ Dye Jiggs.

SCOURING & DYEING
2—Haveg Washers, completely enclosed.
1—Sargent 3-Bowl Skein Scouring machine.
6—Klauder-Weldon Skein Dyeing Machines.
1—Rodney 7-string Dyeing Machine.
1—Obermaier Combination Package & Rawstock Mch.
1—Buhlmann 100 roller cap. 14-color skein dyer.
1—Franklin 500# Package Dyer.
1—1000# Raw Stock Dyeing machine.
1—Obermaier Dyeing Machine.

EXTRACTORS
6—V.V. & Tolhurst 54″ & 60″; rubber & copper baskets.
8—V.V. Fletcher & Tolhurst 40-48″, copper lined.
10—Tolhurst, American Laundry, Bock, & Troy 14″42″, copper baskets.

WASHERS
1—Continuous 60″ Boil-Off Machine, steel tanks.
1—Van Vlaanderen 60″ Open Washer.
2—Open Washers, 5 & 8 compartments, 50″ face.
6—Compartment 30′ Washer, 66″ wide.

CALENDARS
2—V.V. Ball Bearing Calendars, 50″ & 60″.
6—V.V. Butterworth & Textile 3, 6 & 7-Roll Hydraulic Calendars, 80″.
3—Butterworth & Perkins 40″, 54″ & 80″ 3-Bowl Schreiners.
1—Butterworth 3-Roll 54″ Friction Calendar.
2—54″ and 65″ Embossers.

SHEARS
3—P & W 2-Blade Shears, 60″ & 66½″, complete with list saving device and brushes.

DECATERS
3—P & W & Gessner Decaters, 72″, complete.

DRYERS
3—National & P & S Loop Dryers, 30-65′ long.
1—P & S 72″ Raw Stock Dryer, automatic feed.
1—Phila. Raw Stock Dryer, 48″, automatic feeder.
3—Sargent & Hunter Wool Carbonizers.
4—Truck Dryers, 1 & 2 trucks.
1—Multipass Airlay Dryer.
6—Proctor & Schwartz Yarn Dryers.
1—Pin Tenter Dryer, 64″ wide.
1—V.V. 5-Tier Net Dryer.
2—Heathcote and Kenyon Cloth Dryers.

NAPPERS
2—D & F single acting Nappers, 60 & 84″.
3—Gessner & Woonsocket double acting Nappers, 60″, 84″ & 90″.

TENTER FRAMES
1—Textile Fin. Mach. 90′ x 50″ Tenter.
1—W & J 80′ x 50″ Swing Tenter.
1—Heathcote Pin Tenter.
1—25′ Tenter with Bakelite clips.

PALMER QUETCHES & TENTERS
2—V.V. Palmers, 60″ & 72″.
3—Morrison & V.V. 50″, 60″ & 72″ Palmer Quetches.
1—Butterworth 84″ Palmer Quetch with Tenter.
2—V.V. & General Machine 60″ Palmerettes.

PADDERS, MANGLES, QUETCHES
5—Textile & Butterworth 2-Roll Padders, 50″, 62″ & 90″.
4—Butterworth 50″ 2-Roll Starch Mangles.
1—James Hunter 50″ Water Manger.
5—Butterworth & Morrison 2 & 3-roll Quetches, 50-72″.

BUTTON BREAKERS
5—Morrison & V.V. Button Breakers, 50-72″, brass rolls.

BEAMERS—BATCHERS
4—Van Vlaanderen 50″ & 60″ Beamers.
9—Batchers, 48″, 50″ & 72″.

FLAT FOLDERS & DOUBLERS
4—E & Hall Flat Folders, 42″-60″, with motors.
3—P & W & Windle 46″-60″ Doubling, Reeling & Measuring.

COATING MACHINES
Plastic and rubber coaters, 50″-72″.

SEWING MACHINES
5—Morrow 60ABB & 60D3B on stands and tracks.
3—Union Special and Singers.

BRUSHING MACHINES
2— P & W Cloth Brushers, 72″ & 100″.

SLASHERS
8—Saco-Lowell & Johnson Rayon & Cotton Slashers.

DRY CANS
416—Dry Cans, 50″ to 112″ face, 23″ to 84″ dia.

PRINTING MACHINES
7—R. B. & F 1-10 color Print Machines, 40-60″.
1—Waldron 4-Color Wallpaper Print Machine.
1—V.V. 10-color Ribbon Print Machine.

PRINT MACHINE EQUIPMENT
3—BTA Motors, 25, 35 & 50 horsepower.
Star gears, mandrels, copper pans & doctor blades.

ENGRAVING MACHINERY
10—Pantograph Machines, 52″-60″ face.
3—Turning Lathes, 60-64″ face.
4—Polishing Lathes, 60-72″ lg.
1—Etching Trough, 54″.

AGERS
4—Butterworth Cast Iron Agers, 12′, 18′ & 30′ long x 50-60″ wide.

KETTLES
16—Textile Copper Steam Jacketed Color Kettles, tilting, agitated, 240-150 gallons.

CARDING MACHINES
6—Sets D & F Worsted Cards, 60″ x 54″.
2—Sets D & F Worsted Cards, 60″ x 48″.
2—Sets S & F Worsted Cards, 54″ x 54″.
2—Furbush Worsted Cards, 48″ x 48″.
19—Sets D & F Woolen Cards, 48″ x 48″.
1—Sample Card, 48″ dia.
15—D & F Breaker & Finisher Cards, 48″ x 50″.
8—Sargent, Bramwell & Harwood Feeds, 26-72″.

SPINNING MACHINES
2—Large Package Mules, 240 spindles.
155—Whitin & D & F Spinning Frames, 240 spindles, 252, 2″ & 3″ gauge, band driven.
100—Deliveries H & B Drawing Frames, 12″ coilers.
12—Universal #50 & #90 Winders.
133—Fletcher double deck Twisters.
5—Fearnaught & S-L Pickers, 30-60″.

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20—C & K 82″ Woolen Looms, motor driven.
4—C & K 4 x 80″ Rayon Looms.
100—C & K 50″ Rayon Looms.
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1—Permutit Water Softener, 103″ hg. 63″ wd.
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1—P & W. 72" Decater, complete.

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200—C & K 2 x 1 Looms.
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32—C & K #1304 Fine Index Double lift single cylinder heads.

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1—Butterworth 2 Roll Dye Padder, Brass and Rubber Roll, Motor Driven.
1—Butterworth 50" Dye Padder or Mangle, Top Roll Soft Rubber, Bottom Roll Hard Rubber, Rolls approximately 12" diameter, Copper Trough, Reeves Drive, A.C. Motor.

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2—60" Steam Driven Centrifugal Extractors, Perforated Copper Baskets, Quick Opening Cover, 600 R.P.M.
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1—Van Vlaaderen 50' goods, equipped with Marshall Williams Stainless steel clips. Reeves Variable speed transmission. All accessories.
1—50' Van Vlaanderen Tenter Frame, 50" wide, Enclosed Gears, Reeves Variable Speed Transmission.

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1—Curtis and Marble 58" type 2-1 Brushing Machine equipped with 2 soft brushes 9" dia. and 1-2 h.p. Motor.

CAN DRYERS

1—Textile Can Drying and Rolling-up machine, Copper Can 36" diameter, 50" Face.
1—Textile Finishing Machinery Company set of 8 Copper Cans—2 Stacks, 4 Cans to a Stack, Vertical Stacks, 50" wide.
1—Textile Finishing Machinery Co. Copper can dryer consisting of 8 cans, 23" dia. 54" face with take-up, let-off. Reeves Variable speed transmission.
1—Textile Rolling-up and steam machine equipped with copper can 40" dia. 48" face.
1—Textile Finishing Machinery Co. 8 Can Dryer, consisting of Copper Tinned Cans, 23" diameter, 54" Face, with Take-up, Let-off, Reeves Drive, A.C. Motor.
1—Van Vlaanderen 5-tier, 4 section Conveyor Dryer, with Rods, 60" face, Motor Driven Fans, Airfin Heating Units.

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1—Philadelphia Drying Machine Co. "Hurricane" Loop cloth dryer, class D equipped with side driven fans. Air feed arrangement, 84" poles, heated equipment, fans, plaiter, sticks are bakelite & cork covered.
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1—Robert Metcalf Cottage Steamer, 10' long x 8' wide.

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1—Stainless steel lined 18" dye beck Tank 18" x 30" x 96" Single Slot reel, Brass Idler rolls. Geared link chain drive.

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2—Complete Murray Cotton Gins.
1—Kitson Bale Breaker, consisting of:
1—Automatic Feeder, 37½"
1—2 Beater Breaker Picker, Ball Bearing Beaters, 1—16" Porcupine Beater, 1—16" 2 Blade Beater, Motor Driven by 2—5 HP 440 Volt Motors.
3—Kitson 40" Intermediate Pickers with 2 Blade Ball Bearing Beaters, 16", and 12' Apron, Motor Driven.
3—Kitson Finisher Pickers, 2—16", 2 Blade Beaters, Ball Bearing, 12' Apron, Motor Driven.
39—Saco and Pettee 40" Revolving Flat Cards, 27" Doffers, 12" Coilers, 5 Point Settings, Spindle Back.
108—Deliveries, Saco and Pettee Drawing 1⅜" Metallic Rolls, 12" Coilers.
10—Saco and Pettee 11½ x 5½ Slubbers.
(1) 40 Spindles
(4) 52 Spindles
(5) 60 Spindles
2—Providence Slubbers, 11 x 5½, 60 Spindles, 1¼" Front Rolls, Serial No. 8400 Range.
11—Saco and Pettee Intermediates, 9 x 4½, 92 Spindles, 1¼" Rolls.
26—Saco and Pettee 7 x 3½ Speeders, 152 Spindles.
105—Fales & Jenks Spinning Frames, 240 Spindles, 2¾" Gauge, 1⅜" Rings, Whitin, Medium Spindles, Band Driven, 7' Cylinder, Wood Thread Boards, Motor Driven by 5 HP A.C. 440 Volt Motors, V-Belt Drive.
45—Fales & Jenks 220 Spindle Twisters, 3" Gauge, 2" Rings, Wood Thread Boards, 8 Slat Wood Creel, 7½ H.P. Motor Drive, 440 Volt, Clover Leaf Heads.
15—Easton Burnham and Draper Spoolers.
15—Universal #50 Winders.

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1—General Machine Co. 50" 2 roll Quetsch equipped with brass rolls.
1—Van Vlaaderen 3 roll quetsch 60" face, Motor driven, chain drive by 1 h.p. General Electric AC Motor.
1—Van Vlaanderen 65", 2-roll Quetsch, Brass Rolls, Reeves Drive, Ball Bearing.
1—General Machine Co. 2-Roll Quetsch, 50" Brass Rolls, Bottom Roll approximately 9" diameter, Top Roll approximately 7" diameter, arranged for Motor Drive, no Motor.

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7—John Hope 50" Pantograph machines, Double Bar, #1381-1387.
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34—Veeder-Root, Cloth Counters.

FOLDERS

1—Eastwood Gray Goods Folder, 60" wide.
3—E & H Flat Folders, 45" to 60" wide.

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1—Butterworth 42" Hydraulic Schreiner 2 Bowl Calender, equipped with Cotton and Steel Engraved Rolls, Gas Heated Friction Unrolling and Batcher, Tension Rolls, complete with Accumulator and Pump, direct connected to General Electric 3 H.P. A.C. Motor, 50 Volts, 60 Cycle, 3 Phase, 900 RPM. Type M.T., with Drum Controller, Magnetic Switch and Grids.
1—Van Vlaanderen 3-Roll Hydraulic Finishing Calender, Wool Felt Bowls, Large Diameter.
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GAS MIXING UNIT

1—Kemp Gas Mixing Unit with Gas burners.

KETTLES

7—Copper Steam Jacketed Mixing Kettles, equipped with Double Motion Bronze Agitators, 70 to 350 Gallons capacity.

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G. E. Steam flow meter.

DECATORS

1—Parks & Woolson 72" Semi-Decator, with Blanket, Nash Vacuum Pump and Motor.

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1—Parks & Wilson 54" Doubling and Reeling.
1—Van Vlaanderen 72" tubing & doubling machine.
1—General Machine Co. 50" high speed tuber with Reeves drive.

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1—Textile 58" Roller bearing Scutcher.
1—Textile 58" Scutcher, Roller Bearing, Pulley Drive.

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1—Van Vlaanderen 65" 2 burner singeing machine with pump & motor.

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1—Van Vlaanderen 65", 2-burner Gas Singer, with Brushes, all accessories, Gas Pump and Motor.
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1—Textile 66" Open Soaper and Washer, 6 sets of Nip Rollers, Wood Tubs, Brass Immersion Rollers, Reeves Drive, Pleater, A.C. Motor.

SPECIAL

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1—Bale Breaker
1—Whitin Downstroke Cleaner with Cage Section
1—3-Beater Kitson 40" Single Process Picker with Hopper
24—40" Cards, 12" Coilers
20—Deliveries of Whitin Drawing, 12" Coilers
2—12 x 6 Saco & Pettee Slubbers, 72 Spindles each
2—10 x 5 Saco-Pettee Slubbers, 120 Spindles each
10—Dobson Barlowe 8 x 3½ Speeders, 160 Spindles each, used for making 4's yarn
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2—6" gauge Spoolers for 5 x 7 Spools, 100 Spindles each
1—#30 Foster Winder, 100 Spindles, cones and tubes
2—Draper Twisters, 4½" ring, 5½" gauge, 108 Spindles each
2—H & B Twisters, 4½" ring, 5½" gauge, 120 Spindles each
1—10 x 5 Fly Twister with an 8-ply Creel.

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1—Foster 100 spindle Winder #101
5—French Twisters 249 spindles each, ring twisters
1—4 Head Intersecting Gill Box
6—Payne 80 spindle Bottle Bobbin Winders
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50—C. & K. 78" Automatic Looms 4x1 box
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1—Sargent Duplex 36" Burr Picker, $1,500.00 U. S.
2—60" Apperly Feeds...$150.00 U. S.
1—48" Apperly Feed....$150.00 U. S.
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All above in good order, offered subject being unsold, F.O.B. mill floor, terms cash.

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20 Spindles each.
In good condition.

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9 Battens ranging from 22 to 40 spaces: 2-22, 1-38, 2-32 and 1-40; straight shuttle, 2-38 and 1-34 are double decker circular. All Battens take 4½ inch quills except the 40 space Batten Knee roll and Compensators for all Battens, except the 40 space Batten. Write for particulars.

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Neoprene Base Fabric Coating Paint 850 Gallons in 5 Gallon Drums. Can be applied on practically any kind of cotton fabric, including rubberized. Samples and list of Colors mailed upon request.

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ARMY DUCK or SIMILAR FABRIC

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If material is immediately available or could be manufactured on order, please write to—

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WANTED:

Small worsted Spinning unit, French or English system, with all preparatory machines and at least 6 drawing passages—400 Spindles for spinning and 2/400 for twisting.

High Speed Warper, recent model, with electrical stop motion and cone creel with at least 400 running ends.

Crompton & Knowles 4x1 automatic looms, with motor and 25 harness dobby Terrel Machine Co's. Bobbin Stripper. Abbott's or Withings Automatic Quillers.

All in perfect condition, write details, age and price.

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C & K or Guskin Plush Looms

Give Details

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A Mixer Picker

State full Particulars

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WANTED TO BUY

4 set of Davis & Furber woolen cards, and 4 set of Davis & Furber woolen mules. Must be in good condition.

WINONA TEXTILE MILLS, Inc.
Winona, Minn.

NEEDED

1—48" or 60"
Copper Basket Extractor

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Single Units To Complete Plants

Partial List Only—Write for Complete Listing

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2—AGERS 50" & 72".
1—BATCHER 66".
4—BRUSHES, Vertical & Horizontal 36" to 66".
6—CALENDERS 36" to 100" widths.
1—CALENDER, Embossing 43½" with 3 sets design rollers.
2—CALENDERS, Friction 43" and 54".
4—CAN DRYERS 41"x51", 44"x23", 75"x30" and 82"x51".
2—CHINCHILLA Machines 60".
1—DECATUR—SEMI 72" complete, pump, motors & blanket.
1—DECATUR—Full 72" complete.
2—DOUBLERS 54" & 66" with clocks.
2—DRYERS, Pin 80" & 84".
2—DRYERS, Carbonizing or Raw Stock.
1—DRYER, SKEIN conveyor type Hurricane Class D complete.
4—DYEING Hussong 1000-lb capacity each complete with Trolleys, Airlift hoists, pumps motor driven.
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1—EXTRACTOR 72" Vacuum, pump & motor.
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2—FOLDERS 40" & 60".
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4—JIGGS 43" & 59".
3—MANGLES 40" to 66".
2—NAPPERS C&M Single Roll 66".
2—NAPPERS Knitgoods 72" Gear Driven.
2—NAPPERS 80" D.A. 20 roll units.
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1—PADDER, hydraulic 96" x 18" motor driven.
1—PRESS, Apron type 72".
3—PRESSES, Rotary 66½" to 84" Double Beds.
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8—SHEARS 32" to 84" Single & Double Blade, some with List Savers.
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3—WASHERS, Wool 6' & 8' boxes.
1—YARN SCOURING UNIT 3 Bowl individually motor driven.
1—WASHER, 66" squeeze rolls and folder.

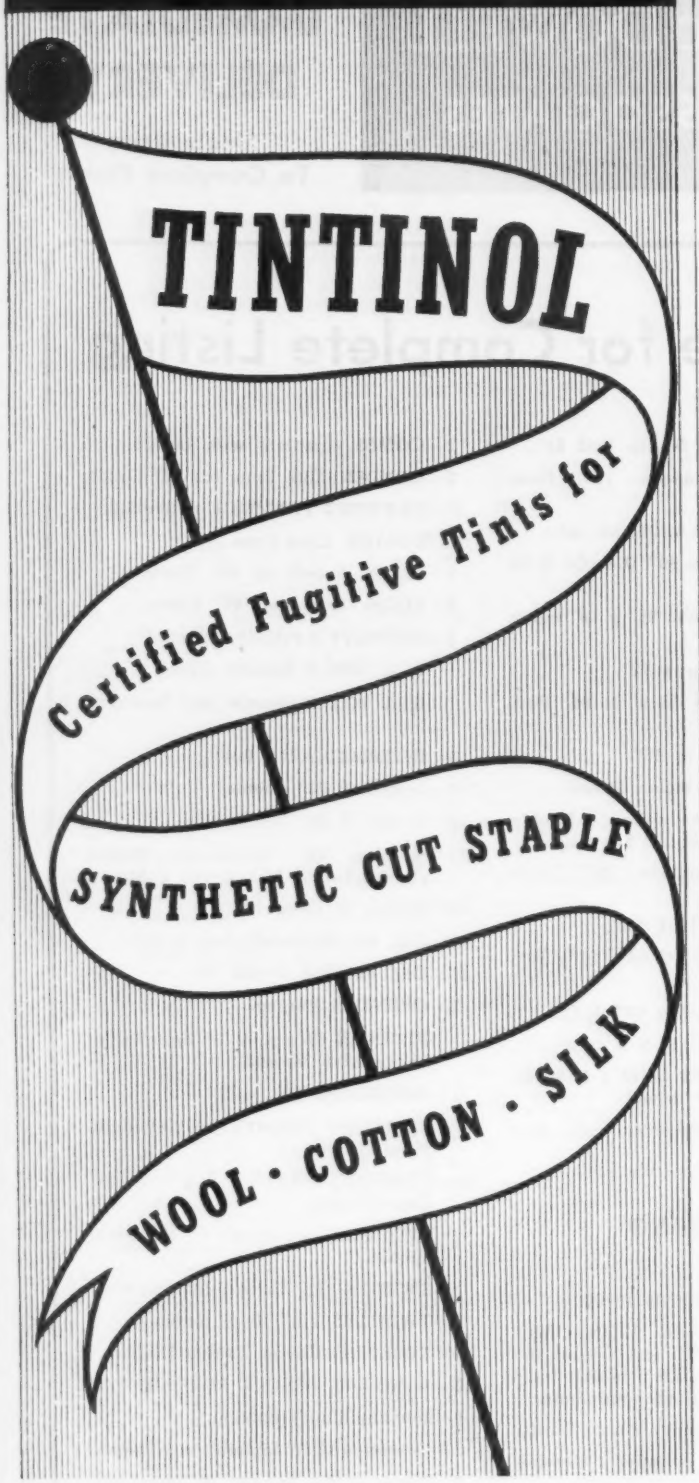
CARDING, SPINNING & WEAVING:

2—Sets 3 cylinder Cards 48x48.
1—SET D&F 4 cylinder IRON CARD 48x48, bramwell feed, metallic breast, intermediate feed, fully clothed taking off 48 good ends.
4—Sets 60x48, 2 cylinder Waste Cards.
8—SETS Iron 2 cylinder Worsted Cards.
2—COMBS complete with circles.
2—CONDENSERS, Tape for 72" Cards.
20—DRAWING FRAMES 6 deliveries.
1—DUSTER, Cone type.
3—FEEDS, Scotch for 60" Cards.
2—FEEDS, Bramwell 40" Cards.
1—GARNETT 3 cylinder 64 x 20.
1—GILL BOX 6 Spindle Cone.
1—GILL BOX 2 Spindle Ball Intersecting.
5—INTERMEDIATES 9x4½.
250—Draper E 30" Looms.
20—Draper E 34" Looms.
22—Stafford 40" Automatic Shuttle change Looms 25 harness Dobby.
30—Draper E Looms 40".
24—C&K 4x1 Automatic Looms 79½".
32—C&K 4x4 Box Looms 92".
2—OPENERS, Vertical.
1—REDUCER (Worsted) 36 Spindle delivery 12x6 Bobbin.
2—SHREDDERS 60" x 30".
32—SPINNING FRAMES 2¾" Gauge, Band Driven.
24—SPINNING FRAMES 3¼" Gauge, Tape Driven.
6—SPOOLERS for 35½" & 40" Jackspools.
1—TWISTER 3½" Gauge, 160 Spindles.
6—TWISTERS 2½" Ring, Novelty.
45—TWISTERS Rayon Double Deck.
3—WARPERS, REELS & BEAMERS 92".
4—Lazenby Cop Winders.
6—Universal #80 Supercone Winders.
1—Foster #101 Winder 80 Spindles.

Miscellaneous spare parts: Bristle brushes, rubber, wood and metallic rolls.

NORMAN M. McDOWELL ASSOCIATES
2568 Park Avenue Bronx 51, New York
Tel.: MElrose 5-1772

"THEY ARE ALL FUGITIVE"



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INDEX TO ADVERTISERS

An * indicates additional data is in 1943 Textile World Yearbook and Catalog.

*Abbott Machine Co. 235
Acme Knitting Mach. & Needle Co. 213
Alabama State Planning Board 190
Allegheny Ludlum Steel Corp. 19
Allen Company 218
*Allis-Chalmers Co..7, 11, 15
*Alloy Steel Products Co. 29
American Air Filter Co., Inc. 100
American Crayon Co... 199
American Magnesium Corp. 25
*American Monorail Co., The .... Inside Back Cover
American Resinous Chemicals Corp. 180
American Rolling Mill Co., The 58
American Viscose Corp. 22
American Woolen Co.. 211
American Yarn & Processing Co. 224
Anthony Co. 197
Arco Co., The..... 193
Arkansas Co., Inc..... 177
Arlington Mills 208
Armour & Co..... 167
Armstrong-Bray & Co.. 213
*Armstrong Cork Co.... 133
*Ashworth Bros. Inc.... 28
Atlantic Rayon Corp... 186
*Atlas Electric Devices Co. 142

*Bahnson Co. 160
*Barber-Colman Co. 191
Beach Soap Co., The Back Cover
Becco Sales Corp..... 63
Benjamin Elec. Mfg. Co. 183
*Blickman, Inc., S..... 204
*Booth Co., Benjamin... 186
Borne-Scrymser Co..... 234
Bradley Washfountain Co. 164
Breuer Electric Mfg. Co. 207
Brinton Co. 211
Buffalo Forge Co..... 195
Burkart-Schier Chemical Co. 224
*Butterworth & Sons Co., H. W. 90

Calco Chemical Div. American Cyanamid Co. 47
*Caldwell Co., W. E..... 219
California Hand Prints. 220
*Cameron Machine Co... 216
Carbomatic Corp. 212
*Chapman Elec. Neutralizer Co. 220
Century Electric Co.... 39
Cheney Bros. 108
*Chicago Pneumatic Tool Co. 62
Ciba Co. 155
Clipper Belt Lacer Co.. 12
Cloverleaf Mfg. Co..... 210
Clutsom Machines Inc.. 148
Cochrane Corp. 216
Cole Mfg. Co., R. D.... 175
Commercial Factors Corp.. Inside Front Cover
Cooper Co., Chas..... 209
Cotton Textile Institute 201
Crabb & Co., William.. 205
*Crane Co. 34
*Crane Mfg. Co..... 209
Crocker-Wheeler Div., Joshua Hendy Iron Works 131
*Crompton & Knowles Loom Works 51

Dana Warp Mills..... 207
Darnell Corp., Ltd..... 168
*Dary Ring Traveler Co. 203
*Davis & Furber Machine Co. 205
Dayton Rubber Mfg. Co. 66
Diagraph-Bradley Stencil Mach. Corp. 203
Diamond Alkali Co., Standard Silicate Div. 215
Diastafor Division, Standard Brands, Inc. 178
Dietert Co., H. W..... 214
*Dinsmore Mfg. Co..... 211
Dodge Mfg. Co..... 149
*Dommerich & Co., L. F. 156
Dow Chemical Co., The 94, 118, 181
*Draper Corporation ... 1
Draper Soap Co..... 176

Eastern Commercial Travelers 170
Eastern Stainless Steel Corp. 57
Emerson Apparatus Co.. 219
Ershler & Krukin, Inc... 200

*Fairbanks, Morse & Co.. 201
Falls Yarn Mills..... 184
Felters Co., The..... 166
*Fidelity Machine Co.... 212
*Finnell System, Inc..... 189
Fiske Bros. Refining Co. 188
Flexible Steel Lacing Co. 218
Fostoria Pressed Steel Corp. 195
*Fuller Brush Co., The.. 137

*Gates Rubber Co., The 44
General Chemical Co.. 37
*Gessner Co. David..... 199
Goodrich Co., B. F., Chemical Div. 21
*Graton & Knight Co... 116
Gulf Oil Corp. Gulf Refining Co. 60

Hay Leather Co., Jas. E. 196
Hooker Electrochemical Co. 163
Houghton & Co., E. F.. 14
*Howard Bros. Mfg. Co.. 24
*Hunt Mach. Co., Rodney 219
*Hunter Machine Co., J. 110
Hyatt Bearings Division, General Motors Corp. 112

*Industrial Dryer Corp.. 176
Industrial Rayon Corp.. 26
*Industrial Steels, Inc.... 179
*Ingersoll-Rand 65
International Nickel Co. 42
*Ives Co., L. T..... 213

*Jenkins Sons, M. W... 175
*Johnson Corp. 199
Johnson & Son, Inc., S. C. 147

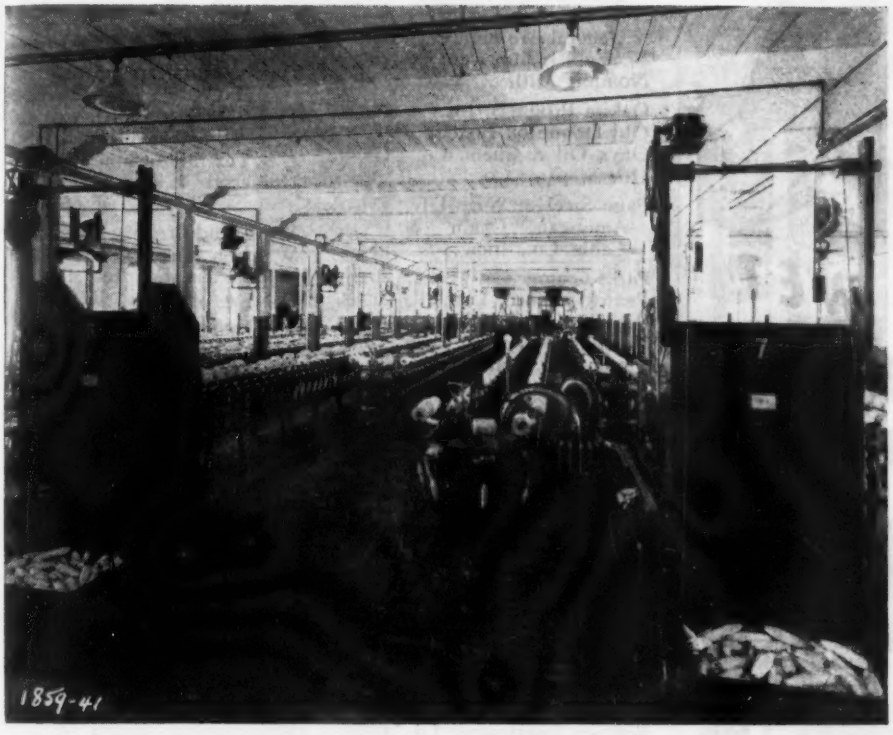
Kaumagraph Co. 127
Keever Starch Co., The. 215
Kenyon & Son, D. R.... 215

*Lane & Bros., Inc. W. T. 217
*Laurel Soap Mfg. Co.... 217
Lazenby & Co., F. A.... 196
Lestershire Spool & Mfg. Co. 102
Loper Co., Ralph E..... 220
Lunkenheimer Co., The. 158

Maguire & Co., John P. 174
Manheim Mfg. & Belting Co. 23
*Mathieson Alkali Works 2
Meese, Inc. 210
Merrow Machine Co... 209
Minot Hooper & Co.... 146
Monomac Spinning Co. 208

(*Continued on page* 236)

ABBOTT AUTOMATIC WINDERS



Winding Average hourly production per operator 900 to 1000 bobbins per hour

2-oz.	Bobbin	.....	112 lb.	hr.
3-oz.	"	.....	169 "	"
4-oz.	"	.....	224 "	"
5-oz.	"	.....	280 "	"
6-oz.	"	.....	338 "	"
7-oz.	"	.....	380 "	"
8-oz.	"	.....	448 "	"

These production figures are being obtained in mills throughout the United States and Canada, and show the lowest direct labor cost of winding.

In addition there is a great saving in floor labor to supply the winders with spinning bobbins and remove wound cones or cheeses.

Supply bobbins are dumped by the doffers into a box at floor level. A lever is pushed and the box is lifted and dumped automatically into a big hopper. These are large enough to eliminate any other storage of yarn. There is no trucking of yarn up and down winder alleys and distributing it along the machines. It is all fed in at one point. Similarly cones are all doffed at end of winder, and move directly into warper creels or to twisters or automatic quillers.

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Canadian Manufacturer: Standard Paint & Varnish Co.—Windsor, Canada.

(*Continued from page* 234)

*Monsanto Chemical Co.. 6
Montgomery Co. 221
*Nat'l Drying Machy. Co. 172
*Nat'l Ring Traveler Co. 207
*National Starch Products, Inc. 129
New Departure, Div. of General Motors 13
N.Y.&N.J. Lubricant Co. 207
Nonquit Mills 208
Oakite Products, Inc.... 203
Old Dominion Box Co.. 27
*Onyx Oil & Chem. Co.. 171
Otis Elevator Co..... 43
Page Steel & Wire Div. American Chain & Cable Co., Inc..... 114
Parks-Cramer Co. 202
Penick & Ford, Ltd.... 217
*Perkins & Son, B. F.... 18
Pittsburgh Corning Corp 46
*Pittsburgh Plate Glass Co., Columbia Chemical Div. 55
Powell Co., Wm..... 120
*Powers Regulator Co... 184
Prince, Smith & Stells.. 159
Procter & Gamble..... 161
*Proctor & Schwartz, Inc. 106
Pyrene Mfg. Co..... 152
Quaker Chemical Products Corp. 122
Railway Express Agency, Air Express Div..... 144
Rayonier Inc. 143
Red Ray Mfg. Co..... 221
Reeves Pulley Co..... 64
Refiners Lubricating Co. 162
*Reiner, Inc., Robt..... 96
Republic Steel Corp... 53
Richmond Oil, Soap & Chemical Co. 184
*Riggs & Lombard, Inc.. 201
Rome Soap Mfg. Co.... 215
Roots-Connersville Blower Corp. 172
Ryerson & Son, Inc., J. T 170
St. Louis Terminal Warehouse Co. 194
*Saco-Lowell Shops 8, 9
Sandoz Chemical Works 17
*Sarco Co., Inc..... 31
*Sargent's Sons Corp.... 20
*Scholler Bros., Inc..... 205
*Scott Co., Henry L..... 221
Scott & Williams, Inc... 223
Sheppard Co., R. H..... 197
Sinclair Refining Co.... 38
Sirrine & Co., J. E..... 222
Sisalkraft Co., The..... 157
SKF Industries Inc..... 48
*Smith Drum Co..... 41
*Solvay Sales Corp..... 185
*Sonneborn Sons, Inc., L. 135
*Sonoco Products Co.... 125
Southworth Machine Co. 213
Staley Mfg. Co., A. E... 173
*Standard Chemical Products, Inc. 187
Standard-Coosa-Thatcher 45
*Standard Fabricators, Inc. 189
*Standard Soap Co. of Camden 182
Steelcote Mfg. Co..... 236
Sterling Ring Trav. Co. 182
*Sturtevant Co., B. F...32, 33
Sun Oil Co..... 92
Sylvania Electric Products, Inc. 141
Taylor Instrument Cos.. 54
Tennant Co., G. H..... 154
Tennessee Eastman Corp 67
*Terrell Machine Co..98, 214
Texas Co. 5
Textile Banking Co..... 192
Textile Machine Works 49, 50
*Thomas & Skinner Steel Prod. Co. 178
Tompkins Bros. Co..... 213
*Torrington Co., The..35, 36
Trust Company of Ga. 206
Union Bay State Chemical Co. 165
Union Special Mach. Co. 104
United Autographic Register Co. 52
U.S. Bobbin & Shuttle Co. 16
*U. S. Ring Traveler Co. 180
U.S. Textile Machine Co. 198
*Universal Winding Co. 68, 138
WAK Industries 224
Waldron Corp., J..... 222
Wallerstein Co., Inc.... 217
Watson-Williams Mfg. Co. 222
Wayne Mfg. Co..... 198
West Disinfecting Co... 150
Western Shade Cloth Co., The 61
Westinghouse Electric Elevator Co. 40
West Point Foundry & Machine Co. 151
*Whitin Machine Works. 10
*Whitinsville Spinning Ring Co. 207
Whitman Co., Inc., Wm. 208
Wildman Mfg. Co..... 153
Willcox & Gibbs Sewing Mach. Co. 145
*Wolf & Co., Jacques... 30
Wolstenholme Sons & Co., Inc. 207
*Worthington Pump & Machinery Corp. 59
Wright Mfg. Division, American Chain & Cable Co., Inc..... 56
Wyandotte Chemicals Corp. 169

INDEX TO ADVERTISERS

PROFESSIONAL SERVICES

Lancaster, Allwine & Rommel... 225
Loper & Co., Ralph E..... 220
Sirrine & Co., J. E..... 222

SEARCHLIGHT SECTION

Classified Advertising

BUSINESS OPPORTUNITIES 225
EMPLOYMENT SERVICE
Raymond Service, Inc., Charles P. 225
POSITIONS VACANT 219, 225
POSITIONS WANTED 225
PROPERTY FOR SALE..... 225
SELLING OPPORTUNITIES...225, 226
WANTED TO PURCHASE....225, 232
USED EQUIPMENT 227-233
Ames Bag Co.....228, 230
Bay State Textile Co..... 230
Cadgene Machinery Co..... 230
Collins & Aikman Corp..... 230
Consolidated Products Co., Inc. 229
Durvea Products Co., Inc..... 232
French, C. M..... 228
Gaines Textile Mchy. Co..... 230
Hafner Associates Inc..... 232
Halsey Yarn Co..... 232
Landy, Murray 228
Machinery Liquidating Company 227
McCloskey, Inc., John J..... 230
McDowell, Norman M..... 233
Paterson Silk Machinery Exch... 228
Republic Textile Equipment Co. 231
Schoonmaker, Robert 228
Schwartz Co., S. B..... 228
Smith Textile Machinery Co..... 228
Speed & Co. Inc., James..... 232
Speizman, Morris 228
Stanhope, R. C..... 228
Stephenson, Harry 230
Textile Auxiliaries 230
Troy Whitehead Machinery Co.. 232
Valley Falls Machinery Co..... 232
Vautrain Assoc. Inc., Charles E. 232
Warren Fabrics Co. Inc..... 232
Wheeler Co., Frank W..... 230
Winona Textile Mills, Inc..... 232

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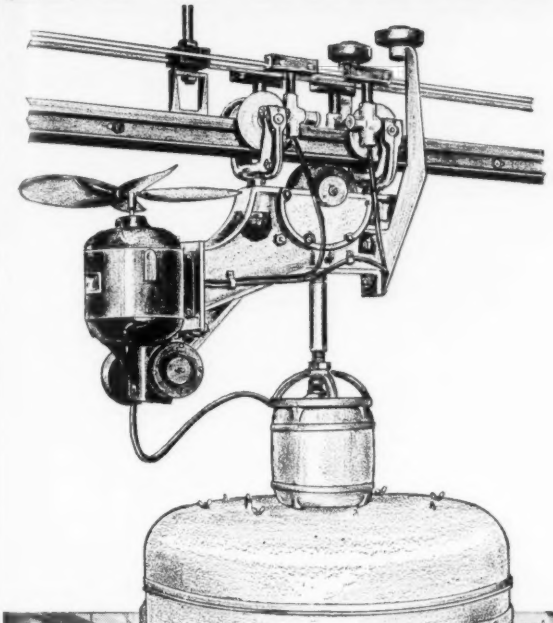

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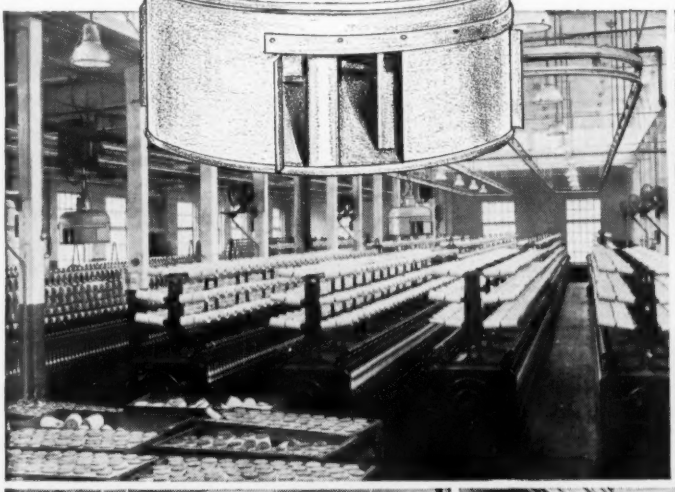

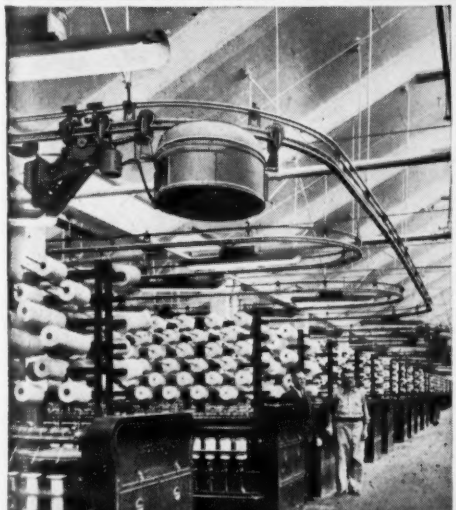

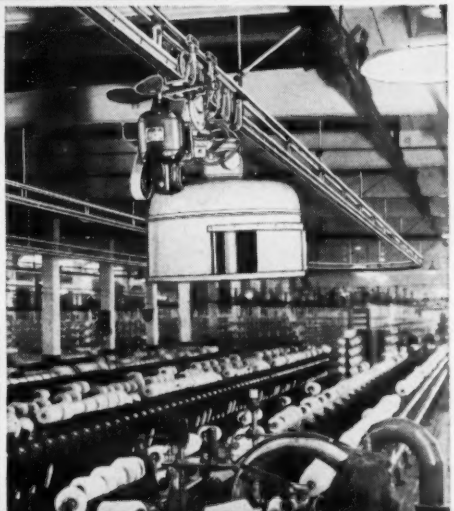

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